



# **CLEAN ENERGY DEVELOPMENT FUND**

## **Annual Report**

Fiscal Year 2011

**Submitted to the Vermont Legislature**

and

**Governor of the State of Vermont**

**January 2012**



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## ■ FY 2011 Summary

Vermont is starting to see real market transformations take shape in the state's clean energy sector, in part due to the work of the Clean Energy Development Fund (CEDF) over the past six years. The CEDF has been an important aspect of the strategy to bring a vibrant clean energy economy to Vermont.

For the CEDF, the twelve months of the 2011 fiscal year revolved mainly around two activities:

- Efficiently deploying the American Recovery and Reinvestment Act (ARRA) and CEDF monies to promote clean energy;
- Actively participating in legislative testimony and hearings regarding House Bill 56 (Act 47) which restructured the CEDF administration and Board, as well as made changes to the Vermont business solar tax credit program

### ➤ **Deploying ARRA & CEDF Funds**

The CEDF and the Department of Public Service (DPS)<sup>1</sup> continued to administer the ARRA funds awarded to Vermont through two Department of Energy grants from the State Energy Program (SEP) and the Energy Efficiency and Conservation Block Grant (EECBG) program. During the year, 276 projects and activities were administered and a total of \$13.7 million in ARRA funds were committed to a wide array of renewable energy and energy efficiency projects.

These ARRA funds were large contributors to the clean energy sector in Vermont, particularly for thermal energy efficiency projects. On these projects the CEDF collaborated with Efficiency Vermont (EVT) to provide funding on numerous projects forming a valuable partnership of funding and technical expertise between the two entities.

In addition to the ARRA funds, the CEDF continued to administer the grants, loans, solar tax credits, and contracts funded with the dollars collected from Entergy Vermont Yankee. The Fund awarded a total \$869,384 for new projects during the fiscal year, provided \$560,975 to the Agency of Agriculture's Vermont Renewable Energy for Agriculture program, supplied \$500,000 to the Vermont Seed Capital Fund, and certified \$8.5 million in 2010 Vermont business solar tax credits.

The 2011 fiscal year will be the last year that the CEDF receives a full year of funding from Entergy Vermont Yankee (Entergy VY) as it has since FY 2007 under two Memoranda of Understanding (MOU) and legislative enactments. In FY 2011, the Fund received \$4,725,259 from Entergy VY. That amount is estimated to drop to \$3,151,000 in FY 2012. Entergy VY is scheduled to make a final payment to the CEDF in March of 2013.

### ➤ **Economic Impacts of CEDF**

During 2011, an economic overview of CEDF expenditures was conducted by Tom Kavet of Kavet, Rockler and Associates, LLC. This report, attached as Appendix 2, identified the positive economic development impact that the Fund has had over the past five years.

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<sup>1</sup> The CEDF, while a separate entity, was housed at the DPS for FY2011. The DPS provided administration, program oversight, technical and legal support for ARRA and CEDF programs.

## ➤ **Legislative Activity**

The principle energy bill of the session, H.56 (Act 47), included sections regarding the CEDF. This legislation restructured the CEDF Board and returned the Fund to the oversight of the Department of Public Service (DPS). To bolster short-term funding for the CEDF, Act 47 also allowed solar projects with a certified tax credit to choose a 50% grant in-lieu of a tax credit, freeing up additional funds for the CEDF's programs on a one-time basis.

The Legislature also corrected a misallocation from a prior fiscal year that allowed another \$2.0 million to be utilized. A half-million dollars of those funds were directed to the CEDF's Small-Scale Renewable Energy Incentive program. Another \$500,000 was allocated by the Legislature to the Vermont Seed Capital Fund operated by the Vermont Center for Emerging Technologies. The remaining \$1 million supported additional business solar tax credits.

## ➤ **CEDF Board**

The Board during FY 2011 consisted of the following members: Robert Dostis (co-Chair) Sam Swanson (Co-chair), Jo Bradley, Tom Evslin, Ellen Kahler, Mary Lintermann, Rich Sedano, and Mark Sinclair. The board members, especially the two co-chairs, put in numerous hours in support of the CEDF. A new CEDF Board was appointed in the summer of 2011. Its members are Gaye Symington (Chair), Patty Richards (Vice Chair), Jo Bradley, Elizabeth Catlin, Jennifer Hollar, Sam Swanson, and Will Wiquist. The Board will engage in a strategic planning process regarding programmatic and funding priorities; the process is expected to be completed by the fall of 2012.

## ■ **Purpose and Scope of this Report**

The purpose of this annual report is to account for the Fiscal Year 2011 activities (July 1, 2010 to June 30, 2011) of the Vermont Clean Energy Development Fund (CEDF).<sup>2</sup> Specifically, the report shows how State CEDF and federal American Recovery and Reinvestment Act (ARRA) monies were distributed to meet the goals of the CEDF, the State Legislature and the ARRA legislation. The report is intended to provide information to the Governor of Vermont, the State Legislature, stakeholders and the citizens of Vermont.

Starting in January 2012, the CEDF will report its activities on a fiscal year basis, rather than on a calendar year basis. As such, this report includes some data and activities covered in the 2010 calendar year report, but the focus is on the 2011 activities. The report also examines a portion of the four-year term of ARRA; the DPS will supply detailed metrics upon completion of the ARRA activities in fiscal years 2012 and 2013.

## ■ **Mission, Authorities & Resources**

The Vermont General Assembly established the CEDF through Act 74 of 2005 and revised the statute in 2011 through Act 47 (30 V.S.A. § 8015). The purpose of the Fund is *"to promote the development and deployment of*

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<sup>2</sup> 30 V.S.A. §8015(e)(7)(A)

*cost-effective and environmentally sustainable electric power and thermal energy or geothermal resources for the long-term benefit of Vermont consumers, primarily with respect to renewable energy resources, and the use of combined heat and power technologies.”*

Act 74 specified that the CEDF will be established and funded by the proceeds due to the state under the terms of two Memoranda of Understanding between the Vermont Department of Public Service (DPS) and Entergy Nuclear VT and Entergy Nuclear Operations, Inc. (i.e., Entergy Vermont Yankee, hereafter Entergy VY), and by any other monies that may be appropriated to or deposited into the Fund. In FY 2011, the CEDF received payments from Entergy VY of \$4,725,259. Cumulative revenue for the fund since inception totals \$28.8 million, deployed for a wide range of clean energy projects throughout Vermont. (Table 1) The MOUs and legislative enactments currently in effect expire in the coming fiscal year; funding thereunder is expected to drop to \$3,151,000 in FY 2012, and \$368,000 for FY 2013.

*Table 1. Summary of Non-ARRA Funds to CEDF*

VERMONT CLEAN ENERGY DEVELOPMENT FUND STATEMENT OF REVENUES FROM INCEPTION							
REVENUES	FY06	FY07	FY08	FY09	FY10	FY11	Total Received FY2006 -FY2011
Entergy Initial Payment	\$200,000						\$200,000
Entergy Dry Cask Storage Payments		\$3,750,000	\$3,125,000	\$2,500,000	\$2,500,000	\$2,500,000	\$14,375,000
Entergy Up-Rate Payments		\$1,570,687	\$3,418,325	\$4,361,303	\$1,868,116	\$2,225,259	\$13,443,690
Interest Income	\$1,276	\$88,532	\$202,496	\$151,894	\$50,656	\$15,720	\$510,574
Loan Interest Income					\$15,947	\$61,259	\$77,206
Loan Repayments					\$51,474	\$208,940	\$260,414
Loan Application Fees					\$2,031	\$8,799	\$10,830
<b>TOTAL REVENUES</b>	<b>\$201,276</b>	<b>\$5,409,219</b>	<b>\$6,745,821</b>	<b>\$7,013,197</b>	<b>\$4,488,224</b>	<b>\$5,019,977</b>	<b>\$28,877,714</b>

The dominant resources deployed by CEDF and DPS in FY 2011 came from the US Department of Energy (DOE) ARRA award to Vermont in 2009 of \$31,592,500 (\$21,999,000 for the ARRA-State Energy Program and \$9,593,500 for the Energy Efficiency and Conservation Block Grant program) for distribution in fiscal years ‘10-‘12. The one-time stimulus helped the CEDF significantly expand the scope and rate of renewable energy development and energy efficiency improvements in Vermont.

In May 2011, the Vermont Legislature passed Act 47 instituting changes to the Clean Energy Development Fund (30 V.S.A. §8015). Via this legislation, the Legislature returned the CEDF to be under the auspices of the DPS and a reconstituted Board. The fund manager formally appointed by the CEDF Board is now an employee of the DPS tasked with managing the CEDF activities.

Act 47 revised the composition of the CEDF Board from nine to seven members with three members appointed by the Commissioner of the DPS, and the chairs of the House and Senate Committees on Natural Resources and Energy each appointing two members. The Act authorized the Board to oversee plans, budgets and program designs of the CEDF, as well as serve as an advisory Board to the DPS (See **Appendix 1** for information on the new Board and other items pertaining to the CEDF.)

The CEDF strives to achieve four interconnected goals (Figure 1):

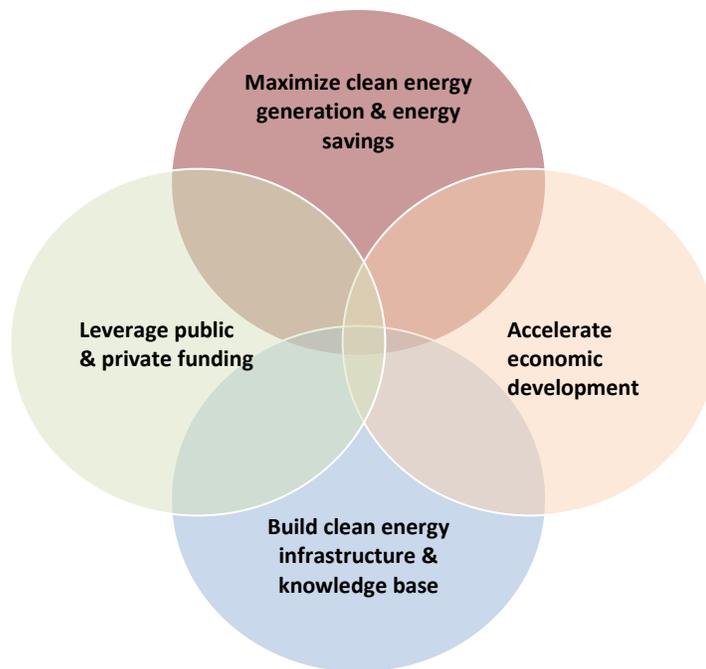


Figure 1. Goals of the Clean Energy Development Fund

## ■ Economic Impacts of the CEDF

In March 2011, the CEDF requested an assessment of the economic impact of its expenditures from inception to date—excluding all federal funds that flowed through the CEDF. The report issued by Kavet, Rockler & Associates, LLC documented the grants and related expenditures, tax credits, and loans made by the CEDF over the previous five years. During that period, the Fund made more than \$15 million in direct project grants and related expenditures, provided almost \$10 million in tax credits and loaned over \$3 million. According to the report, the Fund leveraged its \$28.3 million of outlays generating almost \$110 million in total project expenditures since 2006—nearly four times the CEDF investment. Because these expenditures were directed solely to in-state projects, with most projects demanding substantial local labor and nearly 20% of all expenditures generating significant local manufacturing demand as well, the economic impact of the Fund to the State of Vermont over this period has been exceptional.<sup>3</sup> (See **Appendix Two**)

*“...the economic impact of the Fund to the State of Vermont over this period has been exceptional.”*

-Kavet, Rockler & Associates, LLC

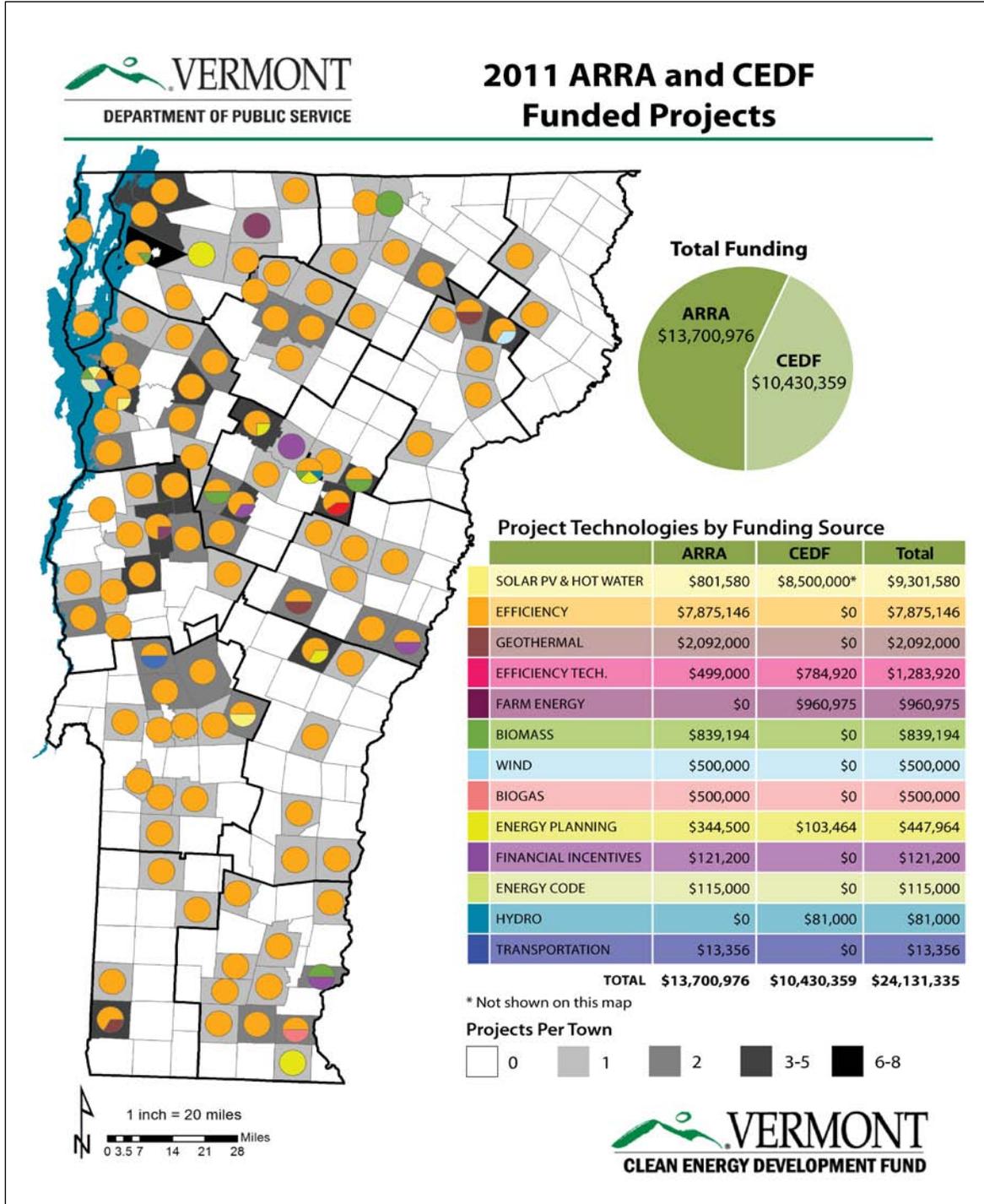
The report notes that most of the funding for projects by the CEDF went to either solar or biomass, with wind, hydro, efficiency, geothermal and related studies forming the balance. Both solar and biomass require local labor during construction, with biomass creating on-going demand for local services that generates future

<sup>3</sup> Memorandum to Steve Klein, Legislative Joint Fiscal Office, From Tom Kavet, Kavet, Rockler & Associates, LLC. March 22, 2011. See: [http://publicservice.vermont.gov/energy/ce\\_files/cedf/Memo%20-%20Clean%20Energy%20Development%20Fund%20Summary.pdf](http://publicservice.vermont.gov/energy/ce_files/cedf/Memo%20-%20Clean%20Energy%20Development%20Fund%20Summary.pdf)

economic benefits among farmers, loggers, truckers and other entities connected to fuel production in the state for years to come.

During FY 2011, the CEDF distributed funding to projects around the state, approximately in rough proportion to population. (Map 1)

Map 1: Location of CEDF and ARRA Funded Projects, FY 2011



## ■ Carbon Reduction and Impact Metrics

The State of Vermont greenhouse gas reductions goals stipulate that the state shall reduce greenhouse gas emissions from the 1990 baseline by 25% by 2012 and 50% by 2028. (10 V.S.A. §578) These goals are an important element of state energy policy. Recent data from the Agency of Natural Resources demonstrate that while the state is decreasing the amount of greenhouse gas emissions, further steep reductions will be required to meet the 2028 goal of 50% reduction.<sup>4</sup> The energy efficiency and renewable energy activities funded via the CEDF contributed towards this goal.

During FY 2011, the Fund and the DPS were in the middle of administering the large volume of ARRA grants and loans. These projects are required to report the results of their activities including greenhouse gas reduction estimates and other impact metrics. However, projects are not obligated to report their results until completion of their term, most of which will not end until FY 2012 or beyond. DPS will evaluate these projects upon completion of the ARRA program.

Because of this timeline, the CEDF provides the estimates below based on partially completed projects using currently available data supplied by grant, loan and contract recipients. FY 2011 ARRA-funded projects show potential reductions in greenhouse gas emissions by approximately 22,900 metric tons (CO<sub>2</sub> equivalents) annually and cost savings of about \$1 million annually.<sup>5</sup> (Table 2) In addition, CEDF projects will yield an extra 13,800 metric tons (CO<sub>2</sub> equivalents) for a total of about 36,700 metric tons GHG reductions per year.

*Table 2. Preliminary Estimated Impact Metrics from ARRA Funding Recipients (FY 2011)*

Program	ARRA-SEP	EECBG	Total
# Building Retrofits	13	123	136
Area of Retrofits (Sq. Ft.)	199,606	1,789,650	1,989,256
Annual Energy Savings (kWh/yr)	566,335	3,432,834	3,999,169
Demand Reduction (kW)	65	392	457
Natural Gas Savings (MMcf/yr)	206	0	206
Fuel Oil Savings (gal/yr)	56,200	71,277	127,477
Propane Savings (gal/yr)	1,500	7,755	9,255
Cost Savings – Electrical (\$/yr)	\$80,389	\$580,089	\$660,478
Cost Savings – Thermal (\$/yr)	\$248,900	\$199,195	\$448,095
Total Cost Savings (\$/yr)	\$329,289	\$779,284	\$1,108,573
Greenhouse Gas Reductions (Metric Tons CO <sub>2</sub> equivalent/yr)	6,108	16,765	22,873
Criteria Air Pollutant Reductions (Tons/yr)	14	147	161

<sup>4</sup> 2011 VT Comprehensive Energy Plan, December 2011. Vermont Department of Public Service Volume 2, Pg. 10.

<sup>5</sup> All estimates based on preliminary data are subject to revision.



*Flood-damaged road in Killington, Vermont. Photo Courtesy Sasha Parise/The Mountain Times*

**Project Highlight: Otter Valley Union High School Transportation Project (EECBG Grant)**

Sometimes grant making has unanticipated benefits. One such example emerged after Tropical Storm Irene. Otter Valley Union High School in Brandon serves seven towns in Rutland County, many of which were decimated as flooding ravaged the Rutland northeast region. The Neshobe River essentially cut a gorge through the Town of Brandon, and the Town of Mendon was divided with roughly half of the town isolated and without access, both on and off Killington Mountain.

Using a CEDF grant of \$13,356 in EECBG funds, the school district for Otter Valley Union High School purchased and installed Bus Route Optimization Software in June 2011. The school district anticipated fuel cost savings due to efficiencies gained by the software that resulted in \$7,000 in actual savings on fuel in the first four months of its use. The school district leaders, however, did not anticipate the critical role the software would play in the wake of a natural disaster such as Irene. Using the Bus Route Optimization Software in the days following the storm, the school district swiftly and efficiently constructed new bus routes to and from Otter Valley Union High School and surrounding towns, thus circumventing the multitude of destroyed roads and bridges in order to transport students safely to and from school.

## ■ FY 2011 FUNDING SUMMARY

Fiscal year 2011 became the focal point for deployment of federal funding under the ARRA program primarily via grants, loans and financial incentives. Much of the groundwork developed at the CEDF and DPS in FY 2010 paid off in FY 2011 as the fund made payments on a portfolio representing 276 projects and activities. The FY 2011 combined federal ARRA and state CEDF commitments of \$24 million leveraged an additional \$39 million of reported matching funds for a total of approximately \$63 million invested in Vermont communities (see Map 1). Using federal formulas supplied at the outset of ARRA, the project investments are expected to support approximately 670 skilled jobs in the clean energy sector in Vermont. This year, the CEDF and DPS awarded and administered a range of grants, contracts, loans, small-scale incentives (rebates), and business

solar tax credits. (Figures 2 & 3; Table 3) Federal ARRA commitments included \$8.8 million for the ARRA-SEP and \$4.9 million for the EECBG program for a total of \$13.7 million. The DOE and the state jointly administer

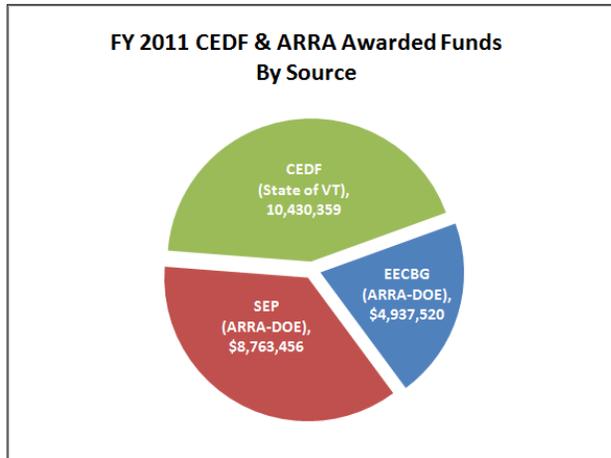


Figure 2. Funding by Source

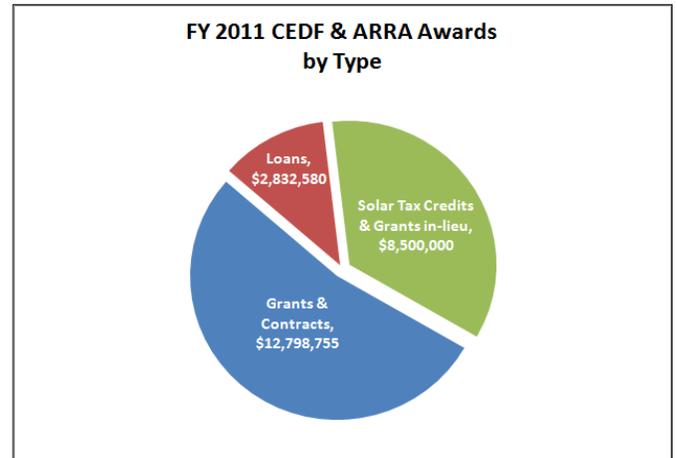


Figure 3. Funding by Type

Table 3. FY 2011 Funds from CEDF & ARRA

FY 2011 Funding Summary	
<b>AMERICAN RECOVERY AND REINVESTMENT ACT</b>	
<b>Energy Efficiency and Conservation Block Grant (EECBG)</b>	
<i>Grants &amp; Contracts</i>	
Municipal, Schools & Other Organizations.....	\$4,937,520
<b>Sub-Total: EECBG</b>	<b>\$4,937,520</b>
<b>State Energy Program (ARRA-SEP)</b>	
<i>Grants &amp; Contracts</i>	
Public Serving Institutions.....	\$1,718,949
Renewable Energy & Other.....	\$1,264,427
State Projects .....	\$3,279,500
<i>Sub-Total: ARRA-SEP Grants &amp; Contracts</i>	<b>\$6,262,876</b>
<i>Loans</i> .....	\$2,500,580
<i>Sub-Total: ARRA-SEP Grants, Contracts &amp; Loans</i>	<b>\$8,763,456</b>
<b>Sub-Total: ARRA.....</b>	<b>\$13,700,976</b>
<b>STATE OF VERMONT</b>	
<b>Clean Energy Development Fund (CEDF)</b>	
<i>Grants</i> .....	\$1,598,359
<i>Loans</i> .....	\$332,000
<i>Business Solar Tax Credits &amp; Grants In Lieu of Credits</i> .....	\$8,500,000
<b>Sub-Total: VT CEDF</b>	<b>\$10,430,359</b>
<b>GRAND TOTAL: CEDF &amp; ARRA (FY 2011).....</b>	<b>\$24,131,335</b>

Note: This table includes funding commitments for CEDF and ARRA funds made in FY 2011. The table does not include funding disbursements made for these projects, or for commitments to the Small-Scale Incentive Program and the Vermont Fuel Efficiency Partnership reported in the 2010 CEDF Annual Report.

both programs to propel energy savings and job creation. Of state funds, the CEDF divided its awards between grants, loans and business solar tax credits.

The CEDF and DPS started awarding ARRA funds in FY 2010 via three grant solicitations. The majority of actual commitments occurred via grant agreements made in FY 2011. In addition, throughout FY 2011 the CEDF distributed ARRA and state monies via its loan program, rebates, contracts or agreements as stipulated by the Legislature. ARRA funds were obligated, disbursed, administered and accounted for in a manner consistent with all applicable federal requirements such as transparency, timeliness, job creation, energy savings, local matching funds and accountability. By law, the CEDF passed these requirements down to its subrecipients.

The sections below summarize the use of state and federal funds that made substantial increases in the state's clean energy economy. The types of projects funded in the fiscal year include solar PV and thermal energy, and efficiency (building retrofits and efficient street lighting) followed by geothermal, energy efficiency technologies, farm energy, biomass, wind, non-farm biogas, energy planning, energy efficiency financial incentive programs, energy code, small hydro, and transportation efficiency. (Table 4)

*Table 4. Technologies & Tools by Funding Source*

Technology	ARRA	CEDF	Total	% of Total
Solar PV & Thermal	\$801,580	\$8,500,000	\$9,301,580	38.5%
Efficiency (Buildings & Lighting)	\$7,875,146	\$0	\$7,875,146	32.6%
Geothermal	\$2,092,000	\$0	\$2,092,000	8.7%
Energy Efficiency Technologies	\$499,000	\$784,920	\$1,283,920	5.3%
Farm Energy	\$0	\$960,975	\$960,975	4.0%
Biomass	\$839,194	\$0	\$839,194	3.5%
Wind	\$500,000	\$0	\$500,000	2.1%
Non-Farm Biogas	\$500,000	\$0	\$500,000	2.1%
Energy Planning	\$344,500	\$103,464	\$447,964	1.8%
Energy Efficiency Financial Incentive Programs	\$121,200	\$0	\$121,200	0.5%
Energy Code	\$115,000	\$0	\$115,000	0.5%
Small-Scale Hydro	\$0	\$81,000	\$81,000	0.3%
Transportation Efficiency	\$13,356	\$0	\$13,356	0.1%
<b>TOTAL</b>	<b>\$13,700,976</b>	<b>\$10,430,359</b>	<b>\$24,131,335</b>	<b>100%</b>

All electric generation projects had to be grid-connected. In addition to the energy saved through efficiency projects, renewable electrical generation projects representing nearly 9 MW of capacity will yield approximately 19 million kWh annually, and thermal projects will generate about 31 billion BTUs per year. (Table 5) In addition to electrical and thermal generation, the CEDF funded 147 energy efficiency projects that will save the state kWhs and BTUs for years to come. Since the activities funded under ARRA cover a multi-year span, the DPS and CEDF will report on energy savings and generations for the full ARRA program upon completion of the program in FY 2013. The CEDF and DPS process funds on a reimbursement basis. In FY 2011, the Fund made reimbursement payments of \$4,302,980 of CEDF state monies, \$12,903,898 from ARRA-SEP and \$3,209,347 from EECBG. **Appendix Three** shows the financials for the Fund and **Appendix Four** lists project commitments for FY 2011.

Table 5. Energy Production Estimates from CEDF & ARRA Funded Projects (FY 2011)

Project Name	Town	Type	Capacity (kW)	Energy production (kWh)	Energy production ( BTU/hr)	Energy Production (MMBtu/yr)
Carbon Harvest	Brattleboro	Biogas	250	4,098,985	5,980,920	15,760
S Burlington Co-Generation	South Burlington	Biogas	65	569,400	9,180,000	-
Goddard College PSI	Plainfield	Biomass	-	-	4,500,000	8,320
North Country Hospital PSI	Newport	Biomass	-	-	15,640,000	6,120
Four Hills Farm	Bristol	Farm Biogas	450	3,022,125	-	-
Kane's Cow Power LLC	Enosburg Falls	Farm Biogas	220	1,450,620	-	-
BGS-Bennington	Bennington	Geothermal	-	-	672,000	-
VT Technical College PSI	Randolph	Geothermal	-	-	48,000	-
Vermont Solar	Killington	PV	300	404,547	-	-
Burke Mountain	East Burke	Wind	100	324,000	-	-
Kingsbury Branch Hydro	North Montpelier	Small Hydro	215	923,000		
Farm at South Village	South Burlington	PV	148	170,000		
Renewable Energy Resource Center (VEIC)	Statewide	Small Scale RE Incentives	1,809	2,122,581	15,007,000	-
Solar Business Tax Credits	Statewide	PV, Solar Thermal	5,253	5,982,116		329
<b>TOTAL</b>			<b>8,810</b>	<b>19,067,374</b>	<b>51,027,920</b>	<b>30,529</b>

**Project Highlight: Dynapower (ARRA Grant)**

Committed to creating green jobs and growing Vermont businesses, the CEDF provides grants and loans to renewable energy industries. One such recipient of a \$250,000 ARRA grant was Dynapower, the South Burlington manufacturer of custom power conversion equipment. Dynapower sought CEDF funds to further the development of its innovative energy storage product. With its grant monies, Dynapower coupled their new PowerSkid to a Northern Power 100kW wind turbine and a 100 kW solar PV system to demonstrate how to improve energy efficiency and utilization from renewable sources. The PowerSkid is a highly efficient 1.5MW bidirectional inverter with integrated transformer tied to battery-based energy storage. Draker Labs of Burlington provided the data acquisition for the project, while Conant Excavation was contracted for civil construction, and Green Mountain Power participated as a utility partner.

Aaron Pollack, Development Director at Dynapower stated, "The CEDF funding allowed us to demonstrate, at our factory, our latest product to support renewable energy and energy efficiency. We plan to use this great development and marketing tool to support the growth of our business within Vermont."



Photo by Dynapower

## How Does CEDF Help Build the Clean Energy Sector in Vermont?

The CEDF emphasizes creating a statewide environment that facilitates the development of new renewable energy projects and ensuring the sustainability of projects. To that end, the CEDF has funded foundational projects, such as:

- An inventory of Vermont hydro resources
- Renewable energy education in classrooms
- Templates for certain types of projects such as district heating and group net metering
- “How-to” guides for installation of solar, wind and biomass
- Research programs to help initiate renewable energy projects
- Energy Atlas interactive web site that describes every renewable energy project in the state

Specific examples of CEDF foundational funding include the following projects:

**The Anemometer Loan Program** at Vermont Technical College, which loans out measuring equipment for potential wind installations, received an ARRA grant for \$15,328. The loan program has placed seven “met” towers and instrumentation sets at 27 sites around the state. The grant helped establish the program and aided the development of training materials that enable clients to install the borrowed equipment themselves, or to hire trained students/staff to do the installation. In addition, the program acquired the computer software “Virtual Met Mast” and learned that the software tended to overestimate wind speeds compared with actual measurements, which will inform future measurements to ensure more accurate recording.

**Group Net Metering Guide** – To encourage group net metering projects, the CEDF awarded an ARRA grant for \$29,500 to Powersmith Farm to create a “how-to” guide for the formation of group net metering projects with input from Vermont Law School. The guide uses a sample project with a sample membership agreement and a sample economic pro forma. The benefits of group net metering include minimization of interconnection agreements, leveraging economies of scale to reduce project costs, and the ability for people with less than optimal sites to fund their own renewable energy project. This guide is intended to facilitate such developments.

**Biomass District Heat Study** – To spur biomass district heating, CEDF provided an ARRA grant for \$17,000 to Community Biomass Inc. to fund a study to determine the oil price that would make biomass district heating cost effective for the a Vermont community. The study also created a tool for communities to use in determining if a biomass heating plant would be economical. A guide was created to help any community execute larger-scale projects with step-by-step analysis of how to perform community-size renewable energy installations.

## ARRA Energy Efficiency and Conservation Block Grant (EECBG)

The continued work of the EECBG program supported energy efficiency and renewable energy projects on government buildings via a competitive local government grant round. EECBG also continued support for regional planning commissions and the Vermont Fuel Efficiency Partnership, both of which received commitments and were reported in 2010. This report includes the commitments made in FY 2011. Of the total multi-year EECBG program funding of \$8.6 million, the CEDF/DPS implemented \$4.8 million of the grants for energy efficiency measures in buildings and transportation, efficient traffic signals and street lighting, energy efficiency financial incentive programs, and renewable energy generation systems. (Table 6) The CEDF and DPS dedicated an additional \$115,000 to support development of a *Building Energy Code Compliance* plan as well as education and outreach on energy codes.

Table 6. FY 2011 EECBG Funding Commitments (\$ Maximum Award)

EECBG Grants (\$ Maximum Award)	Amount Awarded (\$)
Energy Efficiency Retrofits (\$50,000)	\$3,938,103
Traffic Signals and Street Lighting (\$50,000)	\$625,145
Renewable Energy Technologies on Govt. Buildings (\$75,000)	\$124,716
Financial Incentives for Energy Efficiency (\$250,000)	\$121,200
Transportation Projects (\$25,000)	\$13,356
<b>Sub-Total: EECBG Grants</b>	<b>\$4,822,520</b>
Energy Code Compliance Plan	\$55,000
Energy Code Education & Outreach	\$60,000
<b>TOTAL</b>	<b>\$4,937,520</b>

### ➤ EECBG Local Government Competitive Grant Round

A competitive solicitation for local governments yielded a wide range of awards covering most regions of the state. As previously reported, the CEDF/DPS received 323 pre-applications requesting over \$13 million in funding for the \$4.9 million available in this category. In the end 128 distinct

units of government (cities, towns, villages, schools, and school districts) were awarded funds. Over the summer of 2010, the DPS staff rallied to deploy the grant funds under the accelerated timelines of DOE. To meet the demands, the department added ARRA-funded grant managers to its staff. One hundred and seven municipalities and school districts received grant agreements and began their work, with many concluding their projects within a year. Grants implemented in FY 2011 under the EECBG program averaged \$39,187. Five other projects received renewable energy and efficiency grants around the state including biomass and geothermal heating, and transportation planning projects.

### **Project Highlight: *Town of Highgate Energy Efficiency Project (EECBG Grant)***

The Town of Highgate, in northwest Vermont, was awarded \$42,779 in ARRA funds to retrofit old fluorescent lighting with occupancy sensors in three town buildings—the Town Library, Sports Arena and Town Office Complex, the latter of which houses the Town Office, Fire Department and Highway Garage. The Town completed its original scope under budget by approximately \$10,000. With the remaining funds, the Town insulated the entire Town Office Complex attic to R-50 with blown cellulose for a 9% reduction in heating fuel consumption. Both phases of the project have resulted in significant energy savings. The Town has reduced its annual electric consumption by 44,246 kWhs and annual propane consumption by 417 gallons. The efficiency measures undertaken by the Town of Highgate will create an annual cost savings of \$6,422. The Town contributed \$9,211 towards the project.

David Jescavage, Town of Highgate Administrator, stated, “The Selectmen and town employees are very pleased with the new energy efficient lighting in our three main buildings. Townspeople have noticed the brighter appearance. The new R-50 insulation in the Town Office Complex has blocked the drafts and reduced fuel consumption. We expect to start seeing significant savings in our energy bills. It was grant money well spent.”



*Highgate Library, Highgate Center; Photo by David Jescavage*

## ■ ARRA State Energy Program (ARRA-SEP)

The total ARRA-SEP grant to Vermont for the period of FY 2010 through FY 2012 was for \$21,999,000. In FY2010, DPS budgeted \$17 million of these funds for grants, loans, and the popular solar and wind rebates offered through the Vermont Small-Scale Incentive Program.

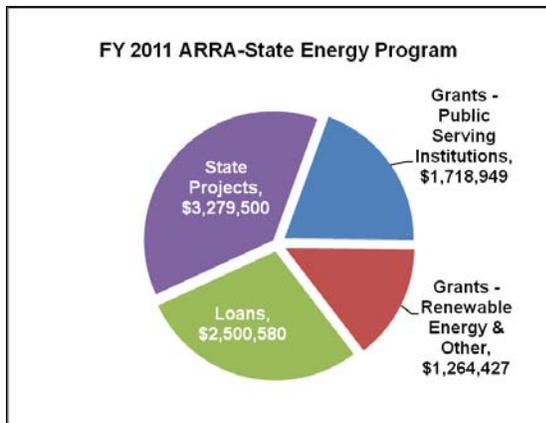


Figure 4. ARRA State Energy Program Activities

In FY 2011, the CEDF and DPS administered more than \$8.7 million of the ARRA-SEP funding. The Fund awarded \$1.26 million in grants and \$2.5 million in low-interest loans for an array of renewable and energy efficiency projects for schools, organizations, communities and businesses. Technologies included efficient lighting, PV, biomass and geothermal heating, wind, landfill biogas and software development. Within ARRA-SEP was the legislatively created \$2 million Public Serving Institutions program, of which \$1.7 million of grant awards for projects at colleges, hospitals and other public organizations were committed in FY 2011. (Figure 4)

In August 2010, the Fund committed \$2 million under ARRA-SEP for a geothermal heating and cooling system for the new State office building in Bennington. In the spring of 2011, the CEDF provided a subsequent award of ARRA-SEP funds to Buildings and General Services to assist with energy efficiency improvements at the Waterbury complex. Fortunately, the buildings targeted for energy efficiency improvements were among the least affected by the tropical storm Irene flood damage and the new windows, attic insulation and air sealing

### Project Highlight: *Bennington District Court and State Office Building (ARRA-SEP Grant)*

The Vermont Department of Buildings and General Services (BGS) received a \$2,000,000 ARRA SEP grant to install a ground source heat pump system at the newly renovated and reconstructed State office building in Bennington. The \$17.5 million dollar project included the demolition of much of the original office building. The state expects to open the new complex in March 2012. The 66,000-square foot structure will have better insulation and air sealing, a ground source heat pump for cooling and heating with individual temperature controls, and solar hot water heating.

By improving the building envelope and replacing the existing HVAC system with a ground source heat pump system, the HVAC annual operating cost will decrease by \$175,000 and the annual carbon footprint will diminish by 642 tons of CO<sub>2</sub>. The new system will eliminate the use of 30,000 gallons of oil per year and result in an estimated reduction of 510,000 kWh of electricity per year.



Photo by DPS

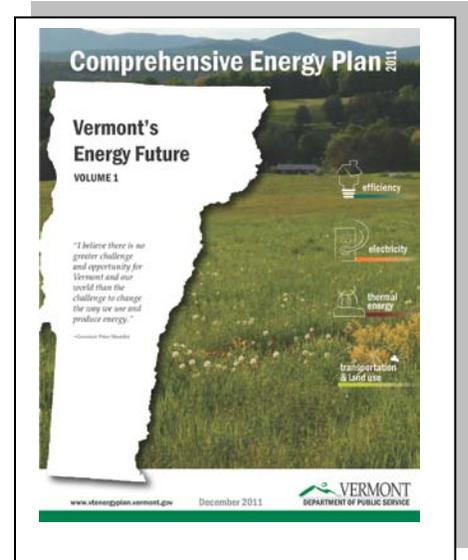
were not adversely affected. The remaining ARRA funds supported state energy planning activities.

In FY 2010, the Fund allocated \$7 million for the Small-Scale Incentive Program, which amplified the \$225,000 awarded in 2009. In FY 2011, the CEDF distributed \$2.7 million of these ARRA-SEP funds for incentives to completed projects.

### ➤ **2011 Comprehensive Energy Plan**

The CEDF deployed a portion of the ARRA-SEP funds for energy planning to assist with development of the revitalized Vermont Comprehensive Energy Plan (CEP) required by the Legislature. The DPS released a revised draft plan in the summer of 2011 and received over 9,000 comments from citizens and interested parties during the public review periods. The CEP includes updated information on the CEDF and recommends identifying sustainable funding for the CEDF. The effort concluded with the release in December of the final 2011 Comprehensive Energy Plan intended to serve as a guide and framework to help Vermonters reduce energy consumption and increase the percentage of renewable energy used in the state.

The plan sets an ambitious goal of obtaining 90% of our total energy from renewable sources by 2050 across all sectors including electric, heating, transportation and land use. The plan represents the combined efforts of many state agencies and departments and Vermonters. (See: [www.vtenergyplan.vermont.gov](http://www.vtenergyplan.vermont.gov))



As part of the FY 2011 revision process, the DPS contracted with technical advisors to provide detailed economic modeling and other analysis. Reports completed under these ARRA-funded contracts are contained as Appendixes to the CEP available from the website listed above.

### ➤ **Competitive Grant and Loan Round**

FY 2011 witnessed the implementation of projects awarded funds in the previous year under the competitive grant and loan round for small-, large-, and community-scale projects, special demonstration projects, and pre-project financial assistance under ARRA-SEP. New grant commitments totaling \$1.26 million were made during the year to projects such as efficiency lighting projects, solar PV projects and mapping.

### ➤ **ARRA-SEP Loans**

The CEDF provided low-interest loans (2%) to qualified projects for the last several years. During FY 2011, the Fund closed on six ARRA-SEP loans valued at \$2.5 million with an additional \$8.1 million of match for a total value of \$10.6 million. These loans are supporting activities including the Carbon Harvest landfill methane project, biomass district heating at Goddard College, a 100 kW wind project at Burke Mountain and a 148 kW PV array at the Farm at South Village in South Burlington. The average loan in the ARRA-SEP pool was approximately \$416,000. (Table 7)

Table 7. FY 2011 Loans (ARRA-SEP)

Project	Location	Amount Awarded (\$)	Estimated kWh/year	Rated Capacity (kW)
Carbon Harvest – Landfill Biogas	Brattleboro	\$500,000	4,098,985	250
Goddard College – Biomass Heating	Plainfield	\$350,000	NA	NA
Draker Laboratories – Energy Software	Burlington	\$425,790	NA	NA
Farm at South Village – Solar PV	South Burlington	\$225,790	170,000	148
SB Electronics –Energy Efficiency Technologies	Barre	\$499,000	NA	NA
Burke Mountain – Wind	East Burke	\$500,000	324,000	100
<b>TOTAL</b>		<b>\$2,500,580</b>	<b>4,592,985 kWh/yr</b>	<b>498 kW</b>

### ➤ Public Serving Institutions Program

In 2009, the Legislature allocated \$2 million of the ARRA funds to support clean energy projects at “public serving institutions.”<sup>6</sup> In FY 2011, the Fund committed grants to 13 colleges, universities, hospitals and health clinics under this program totaling \$1,718,949. Most of these projects finished or made substantial progress during the year. (Table 8) The CEDF provided the balance of funding to the Department of Buildings and General Services for energy efficiency work in the previous year.

Table 8. FY 2011 Public Serving Institution Grants (ARRA-SEP)

Institution	Location	Type	Amount Awarded (\$)
North Country Hospital	Newport	Biomass	\$149,478
Goddard College	Plainfield	Biomass	\$150,000
Brattleboro Retreat	Brattleboro	Efficiency	\$50,000
Burlington College	Burlington	Efficiency	\$233,000
Castleton State College	Castleton	Efficiency	\$137,964
Visiting Nurse Association	Colchester	Efficiency	\$50,000
Marlboro College	Marlboro	Efficiency	\$83,258
Middlebury College	Middlebury	Efficiency	\$137,000
VT College of Fine Arts	Montpelier	Efficiency	\$233,000
Northern Tier Ctr for Health	Richford	Efficiency	\$72,500
College of St Joseph	Rutland	Efficiency	\$122,749
VT Law School	South Royalton	Efficiency	\$250,000
VT Technical College	Randolph	Geothermal	\$50,000
<b>TOTAL</b>			<b>\$1,718,949</b>

<sup>6</sup> Defined as non-profit public and private universities, colleges, hospitals, health clinics and fire districts. Cities, towns, villages, municipally owned fire stations and K-12 schools were not eligible under this program, as they were eligible for funding under the Energy Efficiency and Conservation Block Grant (EECBG) program.

### **Project Highlight: Burke Mountain Wind Turbine (ARRA-SEP Loan)**

The CEDF has been active in the wind sector, from measurement to installation. The 50-year old Burke Mountain Ski Resort was one of the first to receive a federal ARRA-funded loan. With the \$500,000 loan, Burke Mountain Operating Company purchased a Vermont-manufactured 100kW Northwind Wind Turbine which was raised on Burke Mountain in East Burke. Home of the Burke Mountain Ski Resort, which features sweeping, winding trails on 250-acres of terrain, and a vertical drop of 2,011 feet. The wind turbine is the centerpiece of its sustainability goals, as well as an investment that will lower Burke's operating costs. The anemometer and wind maps both showed the estimated wind speed to be 17.13 mph at the site. The turbine is projected to generate ~324,000 kWh annually for an energy savings of \$45,000-\$65,000 per year.

Tim McGuire, Vice President and General Manager of Burke Mountain Operating Company stated, "We are grateful because without the CEDF funds, we couldn't have completed this good project. It's been good for the business, good for the environment and good for the local community as it caused significant job stimulation."



*100 kW turbine atop Burke Mountain;  
Photo by Burke Mountain Operating Group*

### ➤ **Small-Scale Renewable Energy Incentive Program**

The Vermont Small Scale Renewable Energy Incentive Program, created in 2003, continues to help spur the development and production of clean energy in the state. The program provides rebates to individuals, businesses, municipalities, and multi-family low-income housing projects for grid connected and net metered solar electric and small wind systems, solar hot water, and micro-scale hydropower systems. The CEDF contracted the administration of the program by competitive bid with the Renewable Energy Resource Center (RERC, a unit within the Vermont Energy Investment Corporation, VEIC). The program received a boost of \$7,077,897 via ARRA-SEP reported in FY 2010 in addition to the \$225,000 from the previous year. The CEDF has provided funding for this program since the Fund's inception and the CEDF statute highlights the program as one that the CEDF should strive to keep continually funded.

In FY 2011, the CEDF incentive program used both ARRA and state CEDF resources to provide \$2.7 million in rebates to 456 renewable energy installations. These projects had total installed costs topping \$13 million. Applicants reserved an additional 213 systems as of June 30, 2011. Table 9 and Map 2 summarize the FY 2011 wind, PV, and solar hot water system installations and system capacities.

Table 9. FY 2011 Vermont Small Scale Renewable Energy Incentive Program

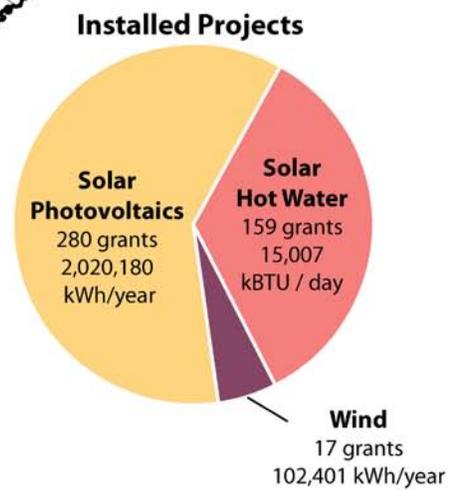
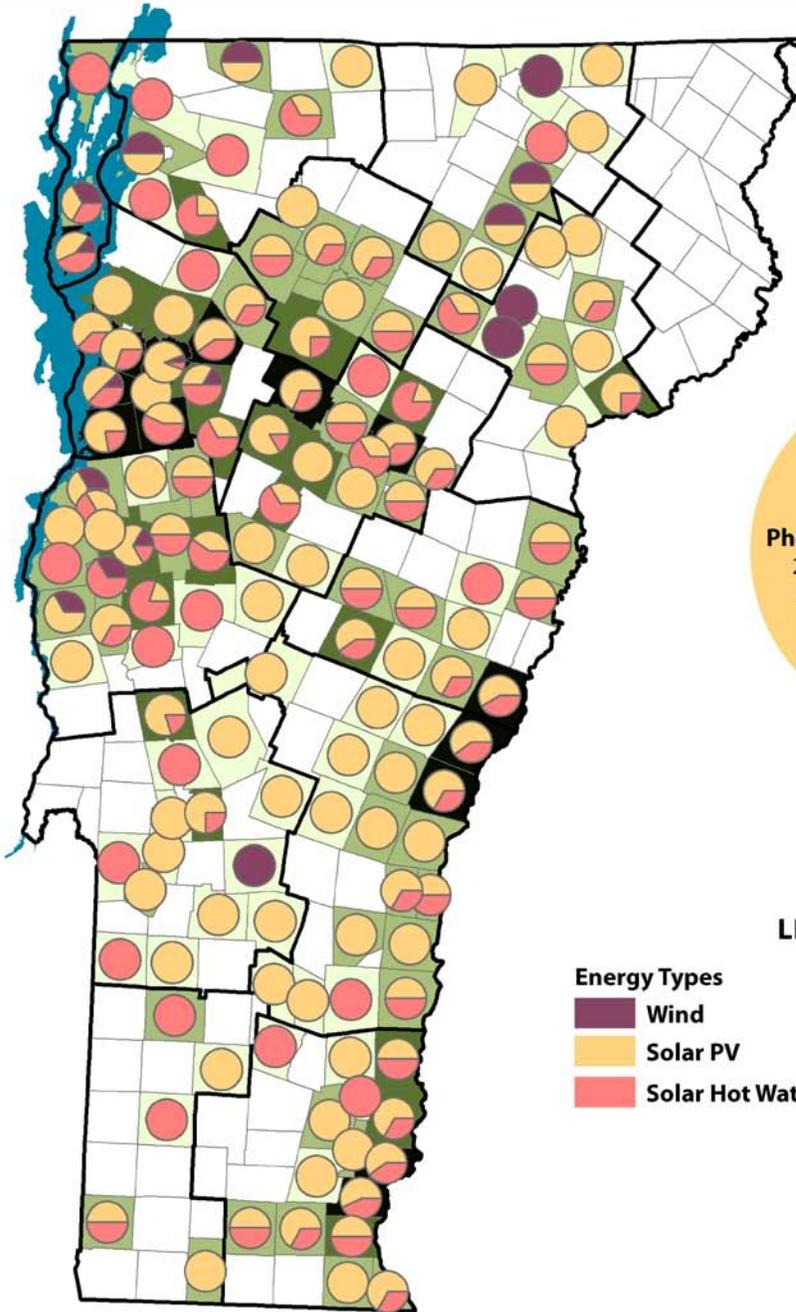
Description	Wind	Solar PV	Solar Hot Water	Total
	Installed Systems			
Number Installed	17	280	159	456
Total Cost of Installed Systems	\$564,044	\$11,196,699	\$2,086,747	\$13,847,490
Incentives Paid for Installed Systems	\$220,720	\$2,205,082	\$297,350	\$2,723,152
Total Installed Capacity (kW & kBTU/day)	88 kW	1,721 kW	15,007 kBTU/day	--
Estimated Annual kWh/yr	102,401	2,020,180	--	--
Leveraged Dollars: \$1 CEDF ARRA =	\$3.75 (CEDF) \$4.04 (ARRA)			
	Projects Underway, Funds Reserved in FY2011			
Number Reserved	20	110	83	213
Total Proposed Capacity (kW & kBTU/day)	2,614 kW	24,031 kW	9,824 kBTU/day	--

Data supplied by Renewable Energy Resource Center

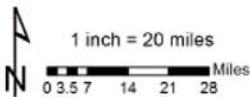
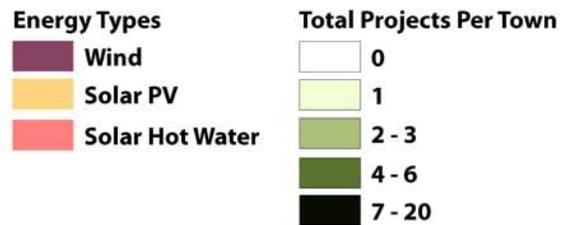
Map 2: Small-Scale Renewable Energy Incentives (Installed FY 2011)



## FY2011 Small-Scale Renewables Incentive Program



**LEGEND**



## ■ CEDF Projects

State funding to the CEDF is through payments made to the State by Entergy VY. Payments decreased from \$6.8 million in 2009 to \$4.7 million in 2011. Payments are estimated to drop to \$3,151,000 in FY 2012. The final payment under the current MOUs with Entergy VY is scheduled for March of 2013.

The CEDF committed \$537,384 in grants and \$332,000 in loans during FY 2011. The Fund provided \$560,975 to the Agency of Agriculture's Vermont Renewable Energy for Agriculture program and supplied \$500,000 to the Vermont Seed Capital Fund. The Clean Energy Development Board certified a total of \$8.5 million in solar tax credits for PV and solar thermal installations. In 2011, the Legislature created a 50% grant in-lieu option for the tax credit holders. The grant in-lieu option was offered in fiscal year 2012 and thus is not reported in this report's data.<sup>7</sup>

### ➤ ***Vermont Business Solar Tax Credit Program***

In FY 2011, the CEDF completed the issuance of business solar tax credits under a program initiated in FY 2010 authorized via Act 159 of 2009 (32 V.S.A §5930z). During the 2011 legislative session, an additional \$1 million of CEDF monies were allocated to the solar tax credit allowing three projects that were on the waiting list to obtain tax credits.

Collectively, these tax credits and grants will leverage approximately \$21 million for estimated total project costs of \$27 million. The combined capacity for these projects is 5,253 kW (AC) for PV and over 329 MMBtu for solar thermal per year.

The substantial investment the CEDF has made in PV, largely through covering the cost to the State of the solar tax credit, has had a tremendous impact on the PV sector in Vermont with solar companies adding employees and experiencing growth. This strong growth based on local projects assists Vermont solar businesses to compete nationally. When Vermont's solar companies can succeed in the growing national and international PV sectors it results in more jobs and revenue for the state and a stronger clean energy economic cluster.

### ➤ ***Competitive CEDF Grant Round***

Through the competitive grant round in FY 2011, the CEDF committed \$537,384 to the following projects: farm methane digesters at Four Hills Farm and Kane's Scenic River Farm, an energy planning study in Fairfield, and a grant to Nathaniel Group to develop an LED light suitable for research, general illumination and fluorescence microscopy applications. The CEDF also supplied funds to the VT Agency of Natural Resources to provide renewable energy project developers with better information on significant natural areas that would make permitting especially difficult.

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<sup>7</sup> Act 47 of 2011 allowed holders of certified 2010 solar tax credits to convert the 30% credit to a grant in-lieu of the tax credit valued at 50% of the credit or 15% of the total project cost, whichever was less. In the autumn of 2011, three projects opted for the 50% grant in-lieu option reducing the CEDF's obligation from \$8.5million to \$6,161,978.

**Project Highlight: Kane's Scenic River Farms Methane Digester (CEDF Grant)**

The CEDF strongly supports farm energy projects. Since its inception, nine CEDF-funded farm methane digesters have come online, including one at Kane's Scenic River Farms, a 660-cow family dairy farm in Enosburg Falls. Kane's Cow Power LLC received a \$150,000 CEDF grant for a biodigester, which produces approximately 1,450,620 kWh annually. Excess power is sold to CVPS for \$0.16/kWh.

Aaron Kane, Co-Owner of Kane's Scenic River Farms Corporation stated, "This added income will pay for the power used on the farm... making the farm feasible again. With this project the family farm can continue to grow and support multiple families and employees."



*Photo by GHD Inc.*

While capturing the potent methane gas, Kane's Scenic River Farms simultaneously captures excess heat from the generator, which not only feeds the digester operation, but also pre-heats the hot water in its barn, thus reducing its fuel usage and energy costs. Additionally, farmers can use the solid manure waste for cow bedding, which is less expensive and not as abrasive as the sawdust typically used for bedding. The cow beds have improved from a dusting to 6-10 inches in depth. In addition, any extra manure may be used as compost or sold, and any remaining liquid manure waste is applied on fields as fertilizer. This liquid manure waste has less phosphorus and nitrogen and therefore is less hazardous to waterways, and due to processing its odor is minimized.

➤ **CEDF Loans**

Launched in 2007, the CEDF loan program funds a variety of clean and/or renewable electric energy technologies and business development activities including PV; wind energy; farm, landfill and sewer methane recovery; combined heat and power; thermal and geothermal systems; hydroelectric systems; and related technologies. The CEDF makes loans that meet the Fund's objectives and advance the overall goals of the Fund as set forth in 30 V.S.A § 8015 and the CEDF Strategic Plan.

In FY 2011, the CEDF issued two loans totaling \$332,000, using State funds in addition to the six loans made with ARRA funds: \$81,000 to the Kingsbury Branch Hydro Electric project in Barre to refurbish a 215 kW micro hydro facility, and a \$251,000 loan to match the SEP-ARRA loan for SB Electronics, a local manufacturer. The Fund experienced no loan delinquencies in FY 2011. (Table 10)

*Table 10. FY 2011 Loans (CEDF)*

Project	Location	Amount Awarded (\$)	Estimated kWh/year	Rated Capacity (kW)
Kingsbury Branch Hydro – Repair of existing micro hydro facility	North Montpelier	\$81,000	923,000	215
SB Electronics – Energy Efficiency Technologies	Barre	\$251,000	NA	NA
<b>TOTAL</b>		<b>\$332,000</b>	<b>923,000 kWh/yr</b>	<b>215 kW</b>

## ■ Conclusion

FY 2011 marked a turning point for the CEDF. Act 47 returned the Fund to the Department of Public Service, where DPS staff issued the largest volume of grants for energy efficiency and renewable energy development the state has seen. At the same time, DPS took on the task of creating the first Comprehensive Energy Plan the state has had since the late 1990s. The plan sets aggressive targets for increased clean energy and includes the CEDF in the future of what will make those targets achievable. The DPS and the newly constituted CEDF Board will work on strategic planning during calendar year 2012, and will offer recommendations regarding funding in this planning process.

The CEDF has played a key role in helping to advance development of technologies such as PV, solar thermal, biomass heating and combined heat and power, ground source heat pumps, wind systems, biogas and other technologies essential to the advancement of Vermont's renewable energy and greenhouse gas reduction goals. Additionally, ARRA funding has allowed the CEDF to help fund hundreds of energy efficiency projects, many in publicly owned buildings, which will reduce energy consumption through an array of energy efficiency practices and products.

### **Project Highlight: Kingsbury Small Hydro (CEDF Loan)**

THE CEDF has supported in-state hydro development by funding over 20 studies and several installations. Vermont has a good amount of hydro capacity that can be developed efficiently with minimal environmental impact. The Kingsbury project is one such example. Kingsbury Hydro has been operating on the Kingsbury Branch of the Winooski River in North Montpelier since 1984. With an \$81,000 CEDF loan to retrofit and repair the hydro facility's equipment, the Kingsbury project can boost the output and reliability of the facility. The 3-part project seeks to repair the leaking steel penstock, reconfigure the two 100kW turbines and generators, and modify the draft tube/tailrace to manage turbulence that impedes production. The repairs to the facility will extend its operating life by roughly 25 years and increase annual power production by approximately 15%.

Bill Porter, Partner of Kingsbury Branch Hydro Electric Company stated, "It's been very frustrating to not be able to get to the needed repairs. The CEDF made it possible for us to do an upgrade needed years ago. And, all the work has been done by local machine shops, designers and laborers."



*Kingsbury Branch of Winooski River running over the dam;  
Photo by Kingsbury Branch Hydro Electric Company*

Despite the progress to date, there is still a tremendous distance to go. The CEDF and DPS have clearly demonstrated the ability to advance the development of renewable technologies throughout Vermont's communities. In the process, the CEDF and DPS have helped many leaders—the developers, installers, planners, legislators, regulators and citizens who continue to express their desire for a clean, renewable energy future—to gain essential practical experience. Such experience will be necessary for Vermont to be an increasing part of the national clean energy economy.

**Project Highlight: Vermont Housing and Conservation Board Energy Efficiency (ARRA-SEP Grant)**

The CEDF provides financial assistance to the state's non-profit affordable housing community for the development and stewardship of housing for low income Vermonters. With the \$2 million dollars of ARRA funding awarded previously, VHCB was able to work on 725 units in 88 public housing buildings in 27 towns. The numbers are impressive. With CEDF funding, the VHCB worked together with energy and housing development partners to complete 427 base weatherization units, 298 units in the deep energy retrofit category with total energy savings of 40% or above, and installation of solar domestic hot water systems to service 390 units.

As a further benefit, this project supported approximately 31,323 hours of work and projects annual energy savings of 23,100 cf of natural gas, 487,156 kWh of electricity, 97,455 gallons of oil and 11,276 gallons of liquefied petroleum gas. Installed solar domestic hot water installations are projected to generate the equivalent energy of 350,587 kWh per year.

Craig Peltier, VHCB Program Director stated, "The CEDF funds were critical because they allowed us to address the energy needs of so many important projects in our portfolio, including many units in smaller buildings that have been a challenge from an energy perspective."



*Photo by VHCB*

## ■ Acknowledgements

The Clean Energy Development Fund and Department of Public Service would like to acknowledge the service of the previous Board, whose terms ended in 2011, and the efforts of the new Board members whose terms began last summer. The CEDF and DPS also commend the DPS staff for creation of this report and management of CEDF and ARRA resources during the year. Finally, DPS offers its gratitude to the hundreds of business, community and institutional leaders whose work is shaping the future of clean energy.

## ■ Appendix One – The Clean Energy Development Fund

In 2005, the Vermont General Assembly established the Vermont Clean Energy Development Fund (CEDF) through Act 74 (now at 30 V.S.A. §8015). The Act specifies that the Vermont Clean Energy Development Fund will be established and funded through proceeds due to the state under the terms of two Memoranda of Understanding (MOU) among Entergy Nuclear Vermont Yankee, LLC, Entergy Nuclear Operations, Inc. and the Vermont Department of Public Service and the related legislative enactments.

One of these MOUs required Entergy VY to pay \$625,000 to the State every three months commencing in January 1, 2006 and ending March 21, 2012 for a total of \$15,625,000. The other MOU requires Entergy VY to pay an amount based upon twenty (20%) percent of the Uprate Power sold by Entergy VY in each hour and shall equal fifty (50%) percent of the weighted average price per MWH received by Entergy VY for Uprate Power generated during such calendar year in excess of a strike price set forth in the MOU.

The CEDF has offered a portfolio of funding opportunities to accelerate the development, commercialization and production of clean energy in Vermont, including grants, loans, contracts, and one equity investment. The rationale that supports the Fund includes recognition that:

- The further development of local clean energy generation in Vermont will provide increased energy diversity and security, price stability, environmental benefits, and a thriving clean energy market to enable clean energy businesses to innovate and expand.
- The promotion of clean energy businesses and industry in the state will create additional employment opportunities and economic activity. Creation and retention of quality jobs is important for current and future generations of Vermonters.
- Fulfillment of the Fund's goals will also support Vermont's renewable energy goals and greenhouse gas emission reduction targets.

### **PURPOSE**

The purposes of the Fund shall be to promote the development and deployment of cost-effective and environmentally sustainable electric power and thermal energy or geothermal resources for the long-term benefit of Vermont consumers, primarily with respect to renewable energy resources, and the use of combined heat and power technologies. (30 V.S.A. § 8015(c))

### **Authorized Expenditures**

Projects for funding may include the following, and in the case of (E)(ii) below shall include continuous funding for as long as funds are available:

- (A) Projects that will sell power in commercial quantities
- (B) Among those projects that will sell power in commercial quantities, funding priority will be given to those projects that commit to sell power to Vermont utilities on favorable terms
- (C) Projects to benefit publicly owned or leased buildings
- (D) Renewable energy projects on farms, which may include any or all costs incurred to upgrade to a three-phase line to serve a system on a farm
- (E) Small-scale renewable energy in Vermont residences, institutions and businesses:
  - (i) Generally; and
  - (ii) Through the small-scale renewable energy incentive program

### **Goals**

In 2010, the Clean Energy Development Board established four interconnected goals to help guide funding decisions:

1. Maximize the generation of renewably produced electrical, thermal, geothermal energy, and energy savings
2. Accelerate the economic development in the state through the clean energy sector
3. Leverage public and private funding
4. Build the knowledge base and clean energy infrastructure in Vermont

## **ADMINISTRATION**

Changes to statute by Act 47 of 2011 moved the CEDF back into the Department of Public Service, which administers the Fund to facilitate the development and implementation of clean energy resources. (30 V.S.A. §8015) As stipulated by Act 47, a new Clean Energy Development (CED) Board will consist of seven members:

- Three members appointed by the Commissioner of the Department of Public Service
- Two members appointed by the chair of the Senate Natural Resources and Energy Committee
- Two members appointed by the chair of the House Natural Resources and Energy Committee

The new Board was appointed on July 9, 2011 with decision-making and approval authority with respect to the plans, budget and program designs. The Board also assists the fund manager in the review of grants and investments; determining the viability of a project, company, product or service; and evaluating marketing and business plans.

### **The 2010 CEDF Board**

- ❖ **Robert Dostis** – Green Mountain Power, Co-chair
- ❖ **Sam Swanson** – Pace Energy & Climate Center, Co-chair
- ❖ **Jo Bradley** – Vermont Economic Development Authority
- ❖ **Tom Evslin** – Evslin Consulting
- ❖ **Ellen Kahler** – Vermont Sustainable Jobs Fund
- ❖ **Mary Lintermann** – DEW Construction Corp.
- ❖ **Rich Sedano** – Regulatory Assistance Project
- ❖ **Mark Sinclair** – Clean Energy Group

### **New 2011 CEDF Board**

- ❖ **Gaye Symington** – High Meadows Fund, Chair
- ❖ **Patty Richards** – La Capra Associates, Vice Chair
- ❖ **Jo Bradley** – VT Economic Development Authority
- ❖ **Elizabeth Catlin** – Bluestone Wealth Management LLC
- ❖ **Jennifer Hollar** – VT Department of Economic, Housing and Community Development
- ❖ **Sam Swanson** – Pace Energy & Climate Center
- ❖ **Will Wiquist** – Green Mountain Club

### **Department of Public Service/CEDF Administrative Personnel**

Elizabeth Miller – Commissioner  
Sarah Hofmann – Deputy Commissioner  
Andrew Perchlik – Fund Manager  
Asa Hopkins – Director, Energy Policy and Planning  
Kelly Launder – Assistant Director  
Sheri Rockcastle – Administrative Services Manager  
Lisa Nisen – Administrative Services Technician  
Pam Hull – Administrative Assistant  
Edward Delhagen – Energy Program Specialist  
Dianne Cummings – Federal Grants & Financial Administrator  
Malcolm Matthew – Financial Specialist  
Michelle Hughes – Grants Specialist  
Karin McNeill – Grants Specialist  
Diane Reynolds – Grants Specialist  
Matthew Walker – Energy Program Specialist

■ **Appendix Two – Memorandum Re: Economic Overview of  
Clean Energy Development Fund Expenditures**



## Kavet, Rockler & Associates, LLC

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Williamstown, Vermont 05679-9003 U.S.A.  
Telephone: 802-433-1360  
Fax: 866-433-1360  
Cellular: 802-272-8385  
E-Mail: tek@kavet.net  
Website: www.kavetrockler.com

# Memorandum

To: Steve Klein, Legislative Joint Fiscal Office  
From: Tom Kavet  
CC: Andrew Perchlik, CEDF  
Date: March 22, 2011  
Re: Economic Overview of Clean Energy Development Fund Expenditures

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## EXECUTIVE SUMMARY

As requested, I have assembled a relevant database and reviewed the grants, tax credits, loans and other expenditures made by the Clean Energy Development Fund (CEDF) over the past five years. Over this period, the Fund has made more than \$15 million in direct project grants and related expenditures, provided almost \$10 million in tax credits and transacted more than \$3 million in loans. It has leveraged these total direct expenditures of more than \$28 million by nearly a factor of four, generating total project expenditures of almost \$110 million since 2006. It is estimated that nearly 80% of the fund's direct expenditures were critical in leveraging matching or additional project funding.<sup>1</sup>

<b>TABLE 1</b>					
<b>Expenditure Category</b>	<b>CEDF Funding</b>		<b>Total Project</b>		
	<b>Since 2006</b>		<b>Estimated Cost</b>		
				<b>Project Cost Percent of Total</b>	
Grant (or equivalent)	\$	15,195,895	\$	59,812,720	54.6%
Tax Credit	\$	9,684,641	\$	39,244,140	35.8%
Loan	\$	3,372,493	\$	10,546,675	9.6%
Total	\$	28,253,029	\$	109,603,535	100.0%

Because funding for the CEDF is derived primarily via payments from the Vermont Yankee nuclear power plant that did not affect Vermont ratepayers over this period, there is little offsetting negative economic impact at the state level associated with these expenditures.

<sup>1</sup> This analysis is based on a review of more than 1000 Individual projects by the JFO, with project characteristics provided by project recipients and Clean Energy Development Fund personnel. It should be noted that "grant" expenditures include \$427,328 in CEDF funds that were reallocated to AHS Community Assistance Funding and Button Up Vermont, VHFA Energy Saver Loans, and various VDOL and VDOA programs, and \$819,672 that was reallocated to the General Fund with no specific purpose.

Because these expenditures were directed solely to in-state projects, with most projects demanding substantial local labor and nearly 20% of all expenditures generating significant local manufacturing demand as well,<sup>2</sup> the economic impact of the Fund to the State of Vermont over this period has been exceptional. Although specific estimates of economic metrics such as jobs, income, output, etc., cannot be estimated without the use of a formal economic model, there is no doubt the Fund has represented a significant net economic benefit to the state, especially during a time of severe recession, employment declines and economic stress. An example of the local expenditure impact and reach of CEDF expenditures is detailed in Appendix A, which lists local firms retained in connection with the construction of seven methane digesters.

In addition to the direct expenditures from the development of the energy infrastructure supported by CEDF, longer term economic and environmental benefits will also be derived from the operation of these facilities. Total CEDF project-related nameplate electrical output should exceed 14 megawatts when completed, in addition to projects that also provide thermal heating output in tandem with or instead of electric power.<sup>3</sup> The funding of these projects also helps stimulate local expertise and manufacturing demand in the growing area of “green energy” development. This could lead to future export-based growth in this important emerging economic sector and concomitant job growth in the State.

Per the below Table 2, most of the projects are either solar (57%) or biomass (34%), with wind, hydro, efficiency measures, geothermal and related studies comprising the remainder. While solar projects tend to utilize a great deal of local labor during construction, they do not generate much in ongoing maintenance or fuel expenditures. Biomass facilities, which also utilize significant local content during construction, however, create ongoing demand for locally produced fuel during their productive life, creating a stream of future economic benefits to farmers, loggers, truckers and other connected to fuel production in the State.

<b>TABLE 2</b>				
<b>Energy Technology Sector</b>	<b>CEDF Funding</b>	<b>Total Project Estimated Cost</b>	<b>Project Cost Percent of Total</b>	
Biomass	\$ 8,653,704	\$ 36,720,888	33.5%	
CHP	\$ 7,500	\$ 15,000	0.0%	
Geothermal	\$ 125,000	\$ 684,000	0.6%	
Hydro	\$ 459,336	\$ 1,767,972	1.6%	
Efficiency	\$ 1,945,844	\$ 2,016,134	1.8%	
Solar	\$ 15,228,196	\$ 62,285,663	56.8%	
Study	\$ 821,874	\$ 2,961,636	2.7%	
Wind	\$ 1,001,575	\$ 3,142,242	2.9%	
Other	\$ 10,000	\$ 10,000	0.0%	
<b>Total</b>	<b>\$ 28,253,029</b>	<b>\$ 109,603,535</b>	<b>100.0%</b>	

<sup>2</sup> Ibid. This review found that about 22% of direct Fund expenditures and 18% of total project costs involved projects where more than 50% of the manufacturing components used in the project were locally produced.

<sup>3</sup> CEDF projects funded to date account for about 375 MMBTU/Hr at rated capacities.

Environmental benefits from these projects could also lead to important, though more difficult to measure, economic impacts. Depending upon how severe the costs of future global warming are and how these costs are measured, projects that reduce greenhouse gas emissions may have economic benefits that far exceed the simple construction and operational impacts described herein.

As shown in the below Table 3, CEDF projects have been distributed throughout the State in rough proportion to population. The largest share of both CEDF and project expenditures have been in Chittenden County, with Rutland, Washington, Bennington and Orleans counties following.

<b>TABLE 3</b>						
<b>County</b>	<b>CEDF Funding</b>	<b>Percent of State Total</b>	<b>Total Project Estimated Cost</b>	<b>Percent of State Total</b>	<b>Population Percent of State<sup>4</sup></b>	
Addison	\$ 1,494,528	5.3%	\$ 9,369,524	8.5%	5.9%	
Bennington	\$ 1,833,651	6.5%	\$ 10,980,344	10.0%	5.8%	
Caledonia	\$ 262,497	0.9%	\$ 838,876	0.8%	4.8%	
Chittenden	\$ 10,368,411	36.7%	\$ 33,684,510	30.7%	24.5%	
Essex	\$ 708	0.0%	\$ 9,309	0.0%	1.0%	
Franklin	\$ 2,084,065	7.4%	\$ 6,059,703	5.5%	7.8%	
Grand Isle	\$ 32,183	0.1%	\$ 130,657	0.1%	1.2%	
Lamoille	\$ 776,236	2.7%	\$ 2,445,669	2.2%	4.3%	
Orange	\$ 646,801	2.3%	\$ 2,177,940	2.0%	4.7%	
Orleans	\$ 2,113,076	7.5%	\$ 8,202,540	7.5%	4.4%	
Rutland	\$ 1,637,172	5.8%	\$ 11,400,657	10.4%	10.1%	
Washington	\$ 3,286,505	11.6%	\$ 10,515,162	9.6%	9.5%	
Windham	\$ 1,986,549	7.0%	\$ 6,594,114	6.0%	7.0%	
Windsor	\$ 1,730,645	6.1%	\$ 7,194,529	6.6%	9.1%	
<b>Total</b>	<b>\$ 28,253,029</b>	<b>100.0%</b>	<b>\$ 109,603,535</b>	<b>100.0%</b>	<b>100.0%</b>	

As noted in this analysis, Clean Energy Development Fund expenditures have clearly generated a substantial and positive economic impact in the State over the past five years. In order to estimate more precise employment, income, economic development and output effects, please let me know if you or others would like to utilize more extensive economic models maintained by the Joint Fiscal Office, such as REMI or REDYN, in order to quantify such effects.

<sup>4</sup> Note: County population shares are based on 2010 U.S. Census Bureau estimates (not actual 2010 Census data, which were not yet released at the time of this analysis).

# APPENDIX A

## **Local Content Example:**

**Vermont Firms Retained in Connection with the  
Expenditure of CEDF Funds for the Construction of  
Methane Digesters for Seven Selected Projects  
(Montagne, Rowell, St. Pierre, Chaput, Maxwell, Goodell,  
and Dubois Projects)**

**Vermont Firms Retained in Association with the Construction  
of Methane Digesters for Seven Selected Projects\***

<b>Vendor Name</b>	<b>Address/Town</b>
Action Concrete Cutting-Coring	Essex Junction, VT 05452
Adam Hallock Contractor	18 Laurel Ave, Bellows Falls, VT 05101
Agricultural Energy Consultants LLC	781 Holt Rd, Plainfield, VT 05667
AH Harris & Sons	994 South Brownell Rd., Williston, VT 05495
A.L. Tyler & Sons	175 Canal Street, Brattleboro, VT 05301
All In One Electric	3055 Buzzell Road, Newport Center, VT 05857
Allen Brothers, Inc	6023 Rt 5, Westminster, VT 01158
All Systems Repair	197 Main Street # A, Winooski, VT 05404
Armand Gagne Welding	P.O. Box 50, Highgate Center, VT 05459
Barker Steel	1631 West Enosburgh Rd, Enosburg Falls, VT 05450
Barrett Trucking	186 South Min Street, White River Junction, VT 05001
Bates Farm Home and Garden	P O Box 449, Enosburg Falls, VT 05450
Bazin Brothers Trucking	2425 Back Westminster Rd, Westminster, VT 05158
Bemis LLC	P.O. Box 289, Jacksonville, VT 05342
Billodeau and Wells - Accountant	20 Main Street, Essex Junction, VT 05452
Bill Sanville Garage Door and Painting Co.	190 Alderbrook Rd., Newport 05857
Bob Stanhope	9 River Streete, Richford, VT 05476
Buck Adams Trucking & Excavating	30 Laurel Ave, Bellows Falls, VT 05101
Brad King Concrete	154 Houghton Brook Rd, Putney, VT 05346
Branon Enterprises	496 Bradley Road, Fairfield, VT 05455
Brent Brigham Construction	Fairfax Road, St. Albans, VT 05478
Brown Enterprises, Inc	50 Smith Haven Lane, South Londonderry, VT 05155
Calkins Sand and Gravel	Route 14, Coventry, VT 05825
Camp Precast Concrete Products	78 Precast Road, Milton, VT 05468
Carr Enterprises	Town Road 3, Bakersfield, VT 05441
Carson's Electric	6609 Ethan Allen Highway, St. Albans, VT 05478
Champlain Construction Inc	189 Birchard Park, Middlebury, VT 05753
Champlain Dairy Service Inc.	P O Box 184, Swanton, VT 05488
Champlain Door Co. Inc.	4182 Highbridge Rd, St. Albans, VT 05478
Champion Overhead Door	86 Hillside Drive, Dummerston, VT 05346
Code 3 Products	92 Canal Street # 2, Brattleboro, VT 05301
Corey Bertrand	Rice Hill Road, Franklin, VT 05457
Couture Sand and Gravel	50 Buck Road, Newport Center, VT 05857
Crocket Engineering LLC	P.O. Box 5205, Essex Junction, VT 05453
Crocket's Construction	509 Glover Rd., Derby, VT 05829
Cross Consulting Engineers	103 Fairfax Road, St. Albans, VT 05478
CVPS	77 Grove St. Rutland, VT 05701
Demag Rigger Crane Service Inc	100 Demag Drive, Williston, VT 05495
Deppman & Foley, PC	P O Box 569, Middlebury, VT 05453
Desrochers Construction	2 Houlton Street, St. Albans, VT 05478
Desrochers Farm Equipment	3761 Route 5, Derby, VT 05829
Desrochers Excavating and Crane Service	4209 Lake Road, Newport, VT 05857
Donald Domina	92 Upper French Hill Rd., Johnson, VT 05656
Donal Newcombs Masonry LLC	2620 West Rd, Putney, VT 05346
Dubois Farm Inc	2038 Route 17E, Vergennes, VT 05491
EJP	123 Airport Parkway, S. Burlington, VT 05403
Environmental Earth Moving Solutions	Underhill, VT
Everett J. Prescott Inc	2318 Airport Rd, Barre, VT 05641
F.W. Webb	7 Franklin Park West, St. Albans, VT 05478
Farmyard Store - heat pipes	Newport, VT
Felco Foundation	P.O. Box 137, Franklin, VT 05457
Fyles Bros Inc	425 Needham Hill Rd, Orwell, VT 05760
Gene's Electric	Main St., Newport Center, VT 05857
George R. Morgan III	West River Rd, Lincoln, VT
Gervais & Sons Inc.	P.O. Box 524, Enosburg Falls, VT 05450
Glen Peck Electric	300 Foote Street, Middlebury, VT 05753
Gravel and Shea - Attorney	76 St. Paul Street, Burlington, VT 05406
Green Mountain Electric Supply	5452 US Route 5, Newport, VT 05855
Green Mountain Power	163 Acorn Lane, Colchester, VT 05446
Green's Ace Hardware	Railroad Street, Enosburg Falls, VT 05450
G Stone Commercial	489 Foote Street, Middlebury, VT 05753
Guay General Repair	399 Hunt Hill Rd., Orleans, VT 05860
H.G. Berger & Son Inc.	16 Waugh Farm Rd., Swanton, VT 05488
Harrison Concrete	1803 Skunk Hill Rd, Fairfax, VT 05454
Harrison Redi-Mix/Concrete	P O Box 2098, Georgia, VT 05468
I.H. Charbonneau & Sons Inc.	12 Fairfield Hill Road, St. Albans, VT 05478

Independent Pipe & Supply Corp	25 Commerce Ave., S. Burlington, VT 05403
Jonathan Bump Contractor	36 Park Place, Brattleboro, VT 05301
John H. Brigham Consulting	Fairfax Road, St. Albans, VT 05478
J.P Carrara & Sons Inc	2464 Case Street, Middlebury, VT 05753
Kilbourn's Excavating	647 Burpee Rd, Bristol, VT 05443
Kristensen, Cummings, Phillips, and Carroll PC	15 Grove Street, Brattleboro, VT 05302
Lantagne Construction	Newport, VT
L & D Royer	477 Route 5, Irasburg, VT 05845
L.N. Consulting Inc.	P.O. Box 65178, Burlington, VT 05406
Legault Electric	308 South Main Street, Richford, VT 05476
Lussier Sawmill	4161 Watertower Road, Enosburg Falls, VT 05450
Mario Paul Excavating	463 US Route 5, Derby, VT 05829
Mercy's Farm Equipment	2896 South Main St., Montgomery Center, VT 05471
Merrill Gas Co Inc	55 Depot Street, Brattleboro, VT 05301
Mike's Fuels	3108 Route 22A, Bridport, VT 05734
Milton CAT	150 Cat Lane, Richmond, VT 05477
Milton Rental and Sales Center	7 Nancy Drive, Milton, VT 05468
Monette, John Attorney	5043 Rt 5, Derby, VT 05829
Mountainview Dairy Equipment	137 Windy Hill Road, Richford, VT 05476
NAPA Auto Parts	P O Box 367, Enosburg Falls, VT 05450
Neagley & Chase Construction Co.	80 Pearl St., Essex Junction, VT 05452
Neuses, Duprey, & Putnam	1 Cross Rd, Middlebury, VT 05753
New England Foam & Coating Co.	108 Concord Ave., St. Johnsbury VT 05819
New England Insulator	7 Liberty St., Swanton, VT 05488
Newport Daily Express	178 Hill St., Newport City, VT 05857
Newport Rental Center	5025 US Route 5, Newport, VT 05855
Newport Sand and Gravel	1912 Route 15E, Jihkson, VT 05656
Nye Insurance Agency	114 Upper Welden St., St. Albans, VT 05478
O'Brien Tree and Crane Service	38 Gray Ln, Putney, VT 05346
Paris Farmers Union	1438 Route 7 S, Middlebury, VT 05753
Pearson & Associates	P O Box 610, Stowe, VT 05672
Perrault Excavating & Building	P.O. Box 138, Newport Center, VT 05857
Pick and Shovel	54 Coventry Streete, Newport, VT 05855
Pioneer Motor and Drives, Inc.	30 Bernard Drive, S. Burl, VT 05403
Poulin Lumber	Route 5, Derby, VT 05829
Premiere Dairy Service	20 Beaugard Drive, St. Albans, VT 05478
Queen City Steel	P O Box 672, Burlington, VT 05402
Red Hed Supply	30 Troy Ave., Colchester, VT 05446
Reed's Equipment	137 Jersey Street South, Vergennes, VT 05491
RG Gosselin Concrete	P O Box 439, Derby, VT 05829
Rheal P Gevry Jr	1194 Otter Creek Hwy, New Haven, VT 05472
RK Miles Inc Lumber and Building Materials	88 Exchange Street, Middlebury, VT 05753
Robert N. Taplin Inc.	Route 5, Derby, VT 05829
Rodem Inc.	P.O. Box 314 Highgate, VT 05459
Ross Environmental Associates	P.O. Box 1533, Stowe, VT 05672
Sky Crane Services	473 Ruby Brace Rd, Starksboro, VT 05487
St. Albans Co-Op Creamery Inc	140 Federal Street, St. Albans, VT 05478
St. Albans Messenger	P O Box 1250, St. Albans, VT 05478
Stanhope Painting & Roofing	3868 Reservoir Rd., Berkshire, VT 05450
Stevens and Associates Engineering	97 Main Street, Brattleboro, VT 05301
Swanton Lumber Co. Inc.	P.O. Box 701, Swanton, VT 05488
Tarrant, Marks, & Gillies	44 East State Street, Montpelier, VT 05601
Taylor Rental Center	1448 Route 7 S, Middlebury, VT 05753
Temple Plumbing and Heating Inc	134 Westminster Rd, Putney, VT 05346
Therrien's Boilder & Mechanical	41 Birchcliff Parkway, Burlington, VT 05401
Tracy Degree Concrete	15 Outlook Street, Newport, VT 05855
VACE	P O Box 810, Montgomery, VT 05601
Valley Crane Services	283 Fort Bridgman Rd # 2, Vernon, VT 05354
Vermont Drilling and Blasting	355 Rocky Road, Johnson, VT 05656
Vermont Economic Development Authority	58 E. Street, Montpelier, VT 05601
Vermont Electric Cooperative	42 Wescom Rd., Johnson, VT 05656
Victoria Brown	150 South Champlain St., Burlington, VT 05401
Waitsfield Champlain Valley Telecom: Repair Service	3898 Main Street, Waitsfield, VT 05673
Wilcox Construction	Shoreham, VT
William Brooks	2 Federal Street, St. Albans, VT 05478
Wright Excavating Inc	County Road, Franklin, VT 05457
Wright's Plumbing and Heating	Quarry Road, Derby, VT 05829
Yankee Farm Credit	P.O. Box 240, St. Albans, VT 05478

\* Data Based on Montagne, Rowell, St. Pierre, Chaput, Maxwell, Goodell, and Dubois Projects, Funded by CEDF

## Appendix Three – FY 2011 CEDF Financial Information

<b>VERMONT CLEAN ENERGY DEVELOPMENT FUND</b>	
<b>FY11 FUND BALANCE STATEMENT</b>	
<b>July 1, 2010 TO June 30, 2011</b>	
<b>FUND BALANCE AS OF:</b>	
June 30, 2010	\$ 7,881,518
<b>CASH FLOWS:</b>	
Additions	\$ 5,019,976
Subtractions	\$ (2,470,032)
<b>NET INCREASE/(DECREASE) IN CASH</b>	<b>\$ 2,549,944</b>
<b>FUND BALANCE AS OF:</b>	
June 30, 2011	\$ 10,431,462
<b>LESS CASH ENCUMBERED</b>	
Grants & Contracts	\$ 3,608,188
Renewable Energy Incentive Program	\$ 500,000
Village Green Incentives	\$ 200,000
Solar Tax Credits	\$ 8,500,000
	\$ 12,808,188
<b>CASH AVAILABLE</b>	<b>\$ (2,376,726)</b>

### VERMONT CLEAN ENERGY DEVELOPMENT FUND STATEMENT OF NET ASSETS June 30, 2011

#### ASSETS

Cash and cash equivalents	\$ 10,872,790
Notes Receivable	\$ 3,142,307
Accrued Interest	\$ 1,669
Investments	\$ 100,000
<b>Total Assets</b>	<b>\$ 14,116,766</b>

#### LIABILITIES

	\$ -
Accounts Payable	\$ 336,835
Grants & Contracts	\$ 3,608,188
Renewable Energy Incentive Program	\$ 500,000
Village Green Incentives	\$ 200,000
Solar Tax Credits	\$ 8,500,000
<b>Total Liabilities</b>	<b>\$ 13,145,023</b>

#### NET ASSETS

<b>Total Net Assets</b>	<b>\$ 971,743</b>
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**VERMONT CLEAN ENERGY DEVELOPMENT FUND  
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES  
IN FUND BALANCE  
FOR FY2011 PERIOD ENDED JUNE 30, 2011**

**REVENUES**

Entergy Dry cast Storage Payments	\$	2,500,000
Entergy Up-Rate Payments	\$	2,225,259
Interest Income	\$	15,720
Loan Interest Income	\$	61,259
Loan Repayments	\$	208,940
Loan Fees	\$	8,799
Total Revenues	<u>\$</u>	<u>5,019,976</u>

**EXPENDITURES**

Wages & Benefits	\$	136,416
Per Diem	\$	2,464
Meetings & Conferences	\$	225
Dues	\$	-
Travel	\$	2,585
Loan Fees	\$	-
Purchased Services	\$	24,293
Misc Administration	\$	1,070
Contracts	\$	355,856
Grants	\$	3,016,866
Loans	\$	-
Transfers Out – Solar Tax Credits	\$	930,258
Transfers In	<u>\$</u>	<u>(2,000,000)</u>
Total Expenditures	<u>\$</u>	<u>2,470,032</u>

Excess of revenues over (under) expenditures \$ 2,549,944

Net change in fund balance \$ 2,549,944

Fund balances, June 30, 2010 \$ 7,881,518

Fund balances, June 30, 2011 \$ 10,431,462

**VERMONT CLEAN ENERGY DEVELOPMENT FUND  
STATEMENT OF REVENUES, EXPENDITURES AND CHANGES  
IN FUND BALANCE - ARRA FUNDS  
FOR FY 2011 PERIOD ENDED JUNE 30, 2011**

	SEP ARRA	EECBG ARRA
<b>REVENUES</b>		
Total Grant to Public Service Dept.	\$ 21,999,000.00	\$ 9,593,500.20
 <b>EXPENDITURES</b>		
Expenditures Prior to FY '11	\$ 248,437.26	\$ 79,467.74
Expenditures In FY '11	FY 11	FY 11
Wages & Benefits	\$ 170,672.10	\$ 185,400.32
Contract & Third Party	\$ 4,128.00	\$ -
Travel	\$ -	\$ 39.78
Office supplies & expenses	\$ 3,402.60	\$ 6,082.19
Grant & Contract Payments	\$ 9,101,338.09	\$ 3,209,347.71
Loans Awarded	\$ 3,802,560.00	\$ -
	\$ 13,082,100.79	\$ 3,400,870.00
 <b>Balance (as of 7/1/2011)</b>	 <b>\$ 8,668,461.95</b>	 <b>\$ 6,113,162.46</b>

Appendix 4: FY 2011 CEDF and ARRA Funded Projects

Project Name	Technology	Sector or Category	City	County/ Area	Sub-award #	Start Term	End Term	Amount of Award	Grantee Match or Leverage	Total Project Costs
<b>ARRA-EECBG Municipal &amp; School District Grants</b>										
Mt Abraham Union High School	Exterior Lighting	Efficiency	Bristol	Addison	ECBG-MUN-070	07/27/10	07/31/11	\$19,221	\$3,247	\$22,468
Starksboro (Robinson) Elementary School	Exterior Lighting	Efficiency	Starksboro	Addison	ECBG-MUN-042	07/01/10	06/30/11	\$12,717	\$1,400	\$14,117
Bingham Memorial School (Cornwall)	Interior Retrofit	Efficiency	Cornwall	Addison	ECBG-MUN-017	07/01/10	06/30/11	\$50,000	\$9,673	\$59,673
Bridport Central School	Interior Retrofit	Efficiency	Bridport	Addison	ECBG-MUN-014	07/01/10	06/30/11	\$45,675	\$5,075	\$50,750
Bristol Elem School	Interior Retrofit	Efficiency	Bristol	Addison	ECBG-MUN-067	07/28/10	07/31/11	\$50,000	\$14,997	\$64,997
Lincoln Elem School	Interior Retrofit	Efficiency	Lincoln	Addison	ECBG-MUN-068	07/28/10	07/31/11	\$35,429	\$6,030	\$41,459
Middlebury Union Middle School	Interior Retrofit	Efficiency	Middlebury	Addison	ECBG-MUN-016	07/01/10	06/30/11	\$50,000	\$9,750	\$59,750
Monkton Elem School	Interior Retrofit	Efficiency	Monkton	Addison	ECBG-MUN-069	07/28/10	07/31/11	\$50,000	\$9,576	\$59,576
Mt Abraham Union High School	Interior Retrofit	Efficiency	Bristol	Addison	ECBG-MUN-043	07/01/10	06/30/11	\$50,000	\$12,273	\$62,273
New Haven (Beeman) Elem School	Interior Retrofit	Efficiency	New Haven	Addison	ECBG-MUN-044	07/01/10	06/30/11	\$46,553	\$4,739	\$51,292
Shoreham Elementary School	Interior Retrofit	Efficiency	Shoreham	Addison	ECBG-MUN-015	07/01/10	06/30/11	\$32,175	\$3,575	\$35,750
Starksboro (Robinson) Elementary School	Interior Retrofit	Efficiency	Starksboro	Addison	ECBG-MUN-041	07/01/10	06/30/11	\$49,785	\$4,600	\$54,385
Town of Granville	Interior Retrofit	Efficiency	Granville	Addison	ECBG-MUN-081	07/30/10	07/31/11	\$48,930	\$9,037	\$57,967
Town of Lincoln	Interior Retrofit	Efficiency	Lincoln	Addison	ECBG-MUN-127	11/22/10	11/30/11	\$50,000	\$10,000	\$60,000
Town of Middlebury	Interior Retrofit	Efficiency	Middlebury	Addison	ECBG-MUN-135	02/18/11	02/29/12	\$43,380	\$4,820	\$48,200
Town of Shoreham	Interior Retrofit	Efficiency	Shoreham	Addison	ECBG-MUN-126	11/18/10	11/30/11	\$37,800	\$4,300	\$42,100
Town of Starksboro	Interior Retrofit	Efficiency	Starksboro	Addison	ECBG-MUN-108	10/07/10	10/06/11	\$26,555	\$13,175	\$39,730
Mt. Anthony Union High School District	Exterior Lighting	Efficiency	Bennington	Bennington	ECBG-MUN-075	08/05/10	08/31/11	\$30,332	\$4,668	\$35,000
Mt. Anthony Union High School District	Interior Retrofit	Efficiency	Bennington	Bennington	ECBG-MUN-074	08/05/10	08/31/11	\$50,000	\$12,500	\$62,500
Town of Shaftsbury	Interior Retrofit	Efficiency	Shaftsbury	Bennington	ECBG-MUN-088	08/12/10	08/31/11	\$46,924	\$5,421	\$52,345
Town of Winhall	Interior Retrofit	Efficiency	Bondville	Bennington	ECBG-MUN-055	07/20/10	07/31/11	\$44,055	\$4,895	\$48,950
Sutton School District	Exterior Lighting	Efficiency	Sutton	Caledonia	ECBG-MUN-054	07/20/10	07/31/11	\$10,000	\$1,100	\$11,100
Town of Burke	Interior Retrofit	Efficiency	West Burke	Caledonia	ECBG-MUN-133	02/18/11	02/29/12	\$11,064	\$5,137	\$16,201
Town of Peacham	Interior Retrofit	Efficiency	Peacham	Caledonia	ECBG-MUN-092	09/01/10	08/31/11	\$22,422	\$9,103	\$31,525
Town of St. Johnsbury	Interior Retrofit	Efficiency	St. Johnsbury	Caledonia	ECBG-MUN-094	09/01/10	03/31/12	\$40,250	\$6,911	\$47,161
City of Winooski - Light	Exterior Lighting	Efficiency	Winooski	Chittenden	ECBG-MUN-100	09/17/10	09/16/11	\$50,000	\$90,143	\$140,143
South Burlington School District	Exterior Lighting	Efficiency	South Burlington	Chittenden	ECBG-MUN-021	07/01/10	09/30/11	\$50,000	\$8,756	\$58,756
Town of Shelburne	Exterior Lighting	Efficiency	Shelburne	Chittenden	ECBG-MUN-129	11/23/10	01/31/12	\$50,000	\$59,086	\$109,086
Underhill Central Elementary School	Exterior Lighting	Efficiency	Underhill Center	Chittenden	ECBG-MUN-073	08/05/10	09/30/11	\$14,460	\$2,250	\$16,710
Charlotte School District	Interior Retrofit	Efficiency	Charlotte	Chittenden	ECBG-MUN-019	07/01/10	06/30/11	\$50,000	\$8,000	\$58,000
City of Winooski - Retro	Interior Retrofit	Efficiency	Winooski	Chittenden	ECBG-MUN-101	09/17/10	12/15/11	\$25,000	\$12,259	\$37,259
JFK Middle School/Winooski School District	Interior Retrofit	Efficiency	Winooski	Chittenden	ECBG-MUN-085	08/06/10	08/31/11	\$50,000	\$32,245	\$82,245
Mt Mansfield School District	Interior Retrofit	Efficiency	Jericho	Chittenden	ECBG-MUN-057	07/22/10	06/30/11	\$50,000	\$54,900	\$104,900
South Burlington School District	Interior Retrofit	Efficiency	South Burlington	Chittenden	ECBG-MUN-020	07/01/10	09/30/11	\$50,000	\$8,756	\$58,756
Town of Charlotte	Interior Retrofit	Efficiency	Charlotte	Chittenden	ECBG-MUN-026	07/01/10	06/30/11	\$25,547	\$4,024	\$29,570
Town of Chittenden	Interior Retrofit	Efficiency	Chittenden	Chittenden	ECBG-MUN-102	09/17/10	10/16/11	\$21,665	\$2,771	\$24,436
Town of Huntington	Interior Retrofit	Efficiency	Huntington	Chittenden	ECBG-MUN-095	09/27/10	01/15/12	\$50,000	\$24,700	\$74,700
Town of Jericho	Interior Retrofit	Efficiency	Jericho	Chittenden	ECBG-MUN-116	12/14/10	03/31/12	\$49,999	\$5,670	\$55,669
Town of Richmond	Interior Retrofit	Efficiency	Richmond	Chittenden	ECBG-MUN-128	11/23/10	11/30/11	\$13,284	\$1,762	\$15,046
Town of Westford	Interior Retrofit	Efficiency	Westford	Chittenden	ECBG-MUN-107	10/25/10	10/24/11	\$12,200	\$1,388	\$13,588
Underhill Central Elementary School	Interior Retrofit	Efficiency	Underhill Center	Chittenden	ECBG-MUN-072	08/05/10	08/31/11	\$50,000	\$105,345	\$155,345
Town of Brighton	Interior Retrofit	Efficiency	Island Pond	Essex	ECBG-MUN-048	07/01/10	06/30/11	\$50,000	\$36,031	\$86,031
Highgate Elementary School	Exterior Lighting	Efficiency	Highgate Center	Franklin	ECBG-MUN-052	07/01/10	06/30/11	\$36,959	\$4,107	\$41,066
Town of Georgia	Exterior Lighting	Efficiency	St. Albans	Franklin	ECBG-MUN-111	11/18/10	11/30/11	\$18,122	\$2,014	\$20,136
Village of Swanton	Exterior Lighting	Efficiency	Swanton	Franklin	ECBG-MUN-109	11/01/10	10/31/11	\$45,289	\$17,156	\$62,445
Bellows Free Academy St. Albans	Interior Retrofit	Efficiency	St. Albans	Franklin	ECBG-MUN-066	07/27/10	07/31/11	\$50,000	\$30,500	\$80,500
City of St. Albans	Interior Retrofit	Efficiency	St. Albans	Franklin	ECBG-MUN-105	09/27/10	07/31/12	\$50,000	\$99,269	\$149,269
Highgate Elementary School	Interior Retrofit	Efficiency	Highgate Center	Franklin	ECBG-MUN-051	07/01/10	06/30/11	\$44,668	\$4,963	\$49,631
Town of Bakersfield	Interior Retrofit	Efficiency	Bakersfield	Franklin	ECBG-MUN-118	12/14/10	12/31/11	\$40,316	\$4,480	\$44,796
Town of Georgia	Interior Retrofit	Efficiency	St. Albans	Franklin	ECBG-MUN-112	12/14/10	03/31/12	\$44,298	\$5,710	\$50,008
Town of Highgate	Interior Retrofit	Efficiency	Highgate Center	Franklin	ECBG-MUN-096	10/25/10	12/15/11	\$42,779	\$4,763	\$47,542
Village of Swanton	Interior Retrofit	Efficiency	Swanton	Franklin	ECBG-MUN-110	11/01/10	10/31/11	\$49,590	\$5,510	\$55,100
Town of Isle La Motte	Interior Retrofit	Efficiency	Isle La Motte	Grand Isle	ECBG-MUN-134	03/21/11	03/31/12	\$17,600	\$2,185	\$19,785
Village of Johnson	Exterior Lighting	Efficiency	Johnson	Lamoille	ECBG-MUN-113	11/22/10	11/30/11	\$49,950	\$24,597	\$74,547
Village of Morrisville Water & Light	Exterior Lighting	Efficiency	Morrisville	Lamoille	ECBG-MUN-114	12/14/10	12/31/11	\$38,307	\$9,317	\$47,624
Eden Central School District	Interior Retrofit	Efficiency	Eden	Lamoille	ECBG-MUN-060	07/22/10	06/30/11	\$39,237	\$4,820	\$44,057
Johnson Town School District	Interior Retrofit	Efficiency	Johnson	Lamoille	ECBG-MUN-058	07/22/10	06/30/11	\$45,820	\$5,113	\$50,933
Town of Belvidere School District	Interior Retrofit	Efficiency	Belvidere Center	Lamoille	ECBG-MUN-062	07/22/10	06/30/11	\$8,481	\$2,700	\$11,181
Town of Hyde Park School District	Interior Retrofit	Efficiency	Hyde Park	Lamoille	ECBG-MUN-059	07/22/10	06/30/11	\$41,088	\$4,782	\$45,870
Town of Waterville	Interior Retrofit	Efficiency	Waterville	Lamoille	ECBG-MUN-103	10/07/10	10/06/11	\$40,993	\$9,555	\$50,548
Waterville School District	Interior Retrofit	Efficiency	Waterville	Lamoille	ECBG-MUN-061	07/22/10	06/30/11	\$21,394	\$2,718	\$24,112
Town of Thetford	Energy Efficiency	Financial	Thetford	Orange	ECBG-MUN-121	09/21/10	12/31/11	\$21,600	\$2,400	\$24,000
Town of Strafford (lite)	Exterior Lighting	Efficiency	Strafford	Orange	ECBG-MUN-098	09/15/10	10/28/11	\$18,860	\$8,000	\$26,860
Orange Center School	Interior Retrofit	Efficiency	East Barre	Orange	ECBG-MUN-049	07/01/10	06/30/11	\$50,000	\$15,533	\$65,533
Randolph Union High School	Interior Retrofit	Efficiency	Randolph	Orange	ECBG-MUN-131	03/23/11	03/31/12	\$50,000	\$18,048	\$68,048

Appendix 4: FY 2011 CEDF and ARRA Funded Projects

Project Name	Technology	Sector or Category	City	County/ Area	Sub-award #	Start Term	End Term	Amount of Award	Grantee Match or Leverage	Total Project Costs
Strafford School District	Interior Retrofit	Efficiency	South Strafford	Orange	ECBG-MUN-045	07/01/10	06/30/11	\$50,000	\$8,308	\$58,308
Town of Chelsea	Interior Retrofit	Efficiency	Chelsea	Orange	ECBG-MUN-090	10/25/10	10/24/11	\$47,451	\$5,289	\$52,740
Town of Corinth	Interior Retrofit	Efficiency	Corinth	Orange	ECBG-MUN-025	07/01/10	06/30/11	\$50,000	\$10,733	\$60,733
Town of Strafford (retro)	Interior Retrofit	Efficiency	Strafford	Orange	ECBG-MUN-097	09/15/10	09/14/11	\$18,686	\$2,446	\$21,132
Town of Thetford	Interior Retrofit	Efficiency	Thetford Center	Orange	ECBG-MUN-099	10/25/10	03/20/12	\$23,282	\$2,937	\$26,219
Town of Williamstown	Interior Retrofit	Efficiency	Williamstown	Orange	ECBG-MUN-106	09/30/10	10/01/11	\$45,833	\$9,560	\$55,392
Washington Village School	Interior Retrofit	Efficiency	Washington	Orange	ECBG-MUN-065	07/21/10	07/31/11	\$50,000	\$69,619	\$119,619
Orleans Elementary School	Exterior Lighting	Efficiency	Orleans	Orleans	ECBG-MUN-047	07/01/10	06/30/11	\$12,433	\$1,383	\$13,816
Craftsbury Schools	Interior Retrofit	Efficiency	Craftsbury Com	Orleans	ECBG-MUN-082	08/06/10	08/31/11	\$45,000	\$13,315	\$58,315
Irasburg Village School	Interior Retrofit	Efficiency	Irasburg	Orleans	ECBG-MUN-053	07/20/10	07/31/11	\$49,743	\$6,797	\$56,540
Lowell Graded School	Interior Retrofit	Efficiency	Lowell	Orleans	ECBG-MUN-063	07/22/10	06/30/11	\$21,600	\$2,400	\$24,000
Orleans Elementary School	Interior Retrofit	Efficiency	Orleans	Orleans	ECBG-MUN-046	07/01/10	06/30/11	\$50,000	\$8,000	\$58,000
Troy School	Interior Retrofit	Efficiency	North Troy	Orleans	ECBG-MUN-079	08/06/10	07/31/11	\$50,000	\$9,103	\$59,103
Pittsford School District	Exterior Lighting	Efficiency	Pittsford	Rutland	ECBG-MUN-077	08/06/10	08/31/11	\$24,905	\$3,636	\$28,541
Currier Memorial School	Interior Retrofit	Efficiency	Danby	Rutland	ECBG-MUN-078	08/06/10	08/31/11	\$47,661	\$9,857	\$57,518
Frederic Duclos Barstow Memorial School	Interior Retrofit	Efficiency	Chittenden	Rutland	ECBG-MUN-024	07/01/10	06/30/11	\$48,000	\$10,780	\$58,780
Leicester Central School	Interior Retrofit	Efficiency	Brandon	Rutland	ECBG-MUN-071	07/27/10	09/30/11	\$50,000	\$8,070	\$58,070
Middletown Springs Elementary School	Interior Retrofit	Efficiency	Middletown Spr	Rutland	ECBG-MUN-084	08/06/10	08/31/11	\$50,000	\$14,475	\$64,475
Pittsford School District	Interior Retrofit	Efficiency	Pittsford	Rutland	ECBG-MUN-076	08/06/10	08/31/11	\$31,562	\$4,020	\$35,582
Shrewsbury Mountain School	Interior Retrofit	Efficiency	Cuttingsville	Rutland	ECBG-MUN-035	07/01/10	09/30/11	\$50,000	\$15,004	\$65,004
West Rutland School	Interior Retrofit	Efficiency	West Rutland	Rutland	ECBG-MUN-034	07/01/10	06/30/11	\$50,000	\$7,789	\$57,789
Whiting Village School	Interior Retrofit	Efficiency	Whiting	Rutland	ECBG-MUN-064	07/19/10	07/31/11	\$17,905	\$6,638	\$24,543
Town of Killington	Exterior Lighting	Efficiency	Killington	Rutland	ECBG-MUN-115	12/14/10	12/31/11	\$15,480	\$1,720	\$17,200
Town of Mendon	Interior Retrofit	Efficiency	Mendon	Rutland	ECBG-MUN-091	09/14/10	09/13/11	\$43,678	\$4,858	\$48,536
Town of Tinmouth	Interior Retrofit	Efficiency	Tinmouth	Rutland	ECBG-MUN-117	12/13/10	03/15/12	\$32,053	\$7,122	\$39,175
Town of Middlesex	Energy Efficiency	Financial	Middlesex	Washington	ECBG-MUN-119	10/01/10	10/30/11	\$13,900	\$1,554	\$15,454
Town of Waitsfield	Energy Efficiency	Financial	Waitsfield	Washington	ECBG-MUN-122	10/01/10	12/31/11	\$13,700	\$1,530	\$15,230
Town of East Montpelier	Exterior Lighting	Efficiency	East Montpelier	Washington	ECBG-MUN-130	02/18/11	02/29/12	\$28,386	\$2,127	\$30,513
Town of Waterbury	Exterior Lighting	Efficiency	Waterbury	Washington	ECBG-MUN-125	10/21/10	10/31/11	\$49,725	\$6,525	\$56,250
U-32 School	Exterior Lighting	Efficiency	Montpelier	Washington	ECBG-MUN-030	07/01/10	06/30/11	\$50,000	\$8,054	\$58,054
Calais Elementary School	Interior Retrofit	Efficiency	Plainfield	Washington	ECBG-MUN-080	08/04/10	08/31/11	\$49,200	\$5,515	\$54,715
City of Barre	Interior Retrofit	Efficiency	Barre	Washington	ECBG-MUN-028	07/01/10	03/31/12	\$50,000	\$37,702	\$87,702
City of Montpelier	Interior Retrofit	Efficiency	Montpelier	Washington	ECBG-MUN-132	02/03/11	02/29/12	\$50,000	\$30,242	\$80,242
Harwood Union High School	Interior Retrofit	Efficiency	Moretown	Washington	ECBG-MUN-033	07/01/10	06/30/11	\$47,303	\$87,038	\$134,340
Town of Fayston	Interior Retrofit	Efficiency	North Fayston	Washington	ECBG-MUN-027	07/01/10	06/30/11	\$18,282	\$5,725	\$24,007
Town of Plainfield	Interior Retrofit	Efficiency	Plainfield	Washington	ECBG-MUN-087	08/11/10	08/31/11	\$34,500	\$35,754	\$70,254
Town of Waitsfield	Interior Retrofit	Efficiency	Waitsfield	Washington	ECBG-MUN-089	08/12/10	08/31/11	\$49,999	\$10,706	\$60,705
Town of Warren	Interior Retrofit	Efficiency	Warren	Washington	ECBG-MUN-104	09/27/10	01/16/12	\$50,000	\$7,780	\$57,780
U-32 School	Interior Retrofit	Efficiency	Montpelier	Washington	ECBG-MUN-029	07/01/10	06/30/11	\$50,000	\$6,827	\$56,827
Warren Elementary School	Interior Retrofit	Efficiency	Warren	Washington	ECBG-MUN-032	07/01/10	06/30/11	\$17,208	\$8,370	\$25,578
Town of Putney	Energy Efficiency	Financial	Putney	Windham	ECBG-MUN-120	09/10/10	12/31/11	\$72,000	\$8,000	\$80,000
Dover School District	Interior Retrofit	Efficiency	Dover	Windham	ECBG-MUN-038	07/01/10	06/30/11	\$12,950	\$2,000	\$14,950
Flood Brook Union School	Interior Retrofit	Efficiency	Londonderry	Windham	ECBG-MUN-031	07/01/10	06/30/11	\$50,000	\$10,465	\$60,465
Marlboro School District	Interior Retrofit	Efficiency	Marlboro	Windham	ECBG-MUN-039	07/01/10	07/15/12	\$45,000	\$5,000	\$50,000
Newfane School District	Interior Retrofit	Efficiency	Newfane	Windham	ECBG-MUN-040	07/01/10	06/30/11	\$50,000	\$21,900	\$71,900
Town of Townshend	Interior Retrofit	Efficiency	Townsend	Windham	ECBG-MUN-093	09/01/10	08/31/11	\$45,000	\$5,000	\$50,000
Town of Wilmington	Interior Retrofit	Efficiency	Wilmington	Windham	ECBG-MUN-036	07/01/10	06/30/11	\$50,000	\$6,000	\$56,000
Village of Bellows Falls	Interior Retrofit	Efficiency	Bellows Falls	Windham	ECBG-MUN-124	12/14/10	12/31/11	\$9,000	\$1,000	\$10,000
Wardsboro Central School	Interior Retrofit	Efficiency	Wardsboro	Windham	ECBG-MUN-037	07/01/10	06/30/11	\$50,000	\$10,205	\$60,205
Green Mountain Union High School	Interior Retrofit	Efficiency	Chester	Windsor	ECBG-MUN-022	07/01/10	10/31/11	\$50,000	\$11,276	\$61,276
Royalton School District	Interior Retrofit	Efficiency	South Royalton	Windsor	ECBG-MUN-056	07/22/10	06/30/11	\$45,000	\$10,142	\$55,142
Town of Cavendish	Interior Retrofit	Efficiency	Cavendish	Windsor	ECBG-MUN-123	12/14/10	01/31/12	\$50,000	\$20,920	\$70,920
Town of Sharon	Interior Retrofit	Efficiency	Sharon	Windsor	ECBG-MUN-086	08/09/10	08/31/11	\$49,500	\$5,500	\$55,000
Woodstock Elementary School	Interior Retrofit	Efficiency	Woodstock	Windsor	ECBG-MUN-018	07/01/10	06/30/11	\$40,700	\$5,488	\$46,188
<b>Sub-Total: ARRA-EECBG Municipal &amp; School Districts</b>								<b>\$4,647,396</b>	<b>\$1,544,530</b>	<b>\$6,191,926</b>

ARRA-EECBG Renewable Energy & Other Projects										
Dorset Fire Stations	Energy Efficiency	Efficiency	East Dorset	Bennington	EECBG-CED-007	07/01/10	12/31/10	\$37,052	\$4,117	\$41,169
Sutton School District	Geothermal/HVAC	Geothermal	Sutton	Caledonia	EECBG-CED-004	07/21/10	07/31/11	\$42,000	\$18,417	\$60,417
St. Albans	CHP & District	Biomass	St. Albans	Franklin	EECBG-CED-009	09/01/10	09/01/11	\$25,000	\$9,850	\$34,850
Otter Valley Union High School	Software	Transportation	Brandon	Rutland	EECBG-CED-005	07/10/10	06/30/11	\$13,356	\$2,684	\$16,040
Code Compliance Plan	--	Energy Code	Burlington	Statewide	20504	09/02/11	12/31/11	\$55,000	\$0	\$55,000
Code Education & Outreach	--	Energy Code	Burlington	Statewide	19758	06/07/11	12/31/11	\$60,000	\$0	\$60,000
Town of Fayston	Biomass Pellet	Biomass	North Fayston	Washington	EECBG-CED-003	07/02/10	06/30/11	\$57,716	\$6,740	\$64,456
<b>Sub-Total: ARRA-EECBG Renewable Energy &amp; Other</b>								<b>\$290,124</b>	<b>\$41,808</b>	<b>\$331,932</b>

Appendix 4: FY 2011 CEDF and ARRA Funded Projects

Project Name	Technology	Sector or Category	City	County/ Area	Sub-award #	Start Term	End Term	Amount of Award	Grantee Match or Leverage	Total Project Costs
<b>ARRA-SEP Public Serving Institutions Grants</b>										
Middlebury College PSI	Energy Efficiency	Efficiency	Middlebury	Addison	D-ASEP-REN-017	07/01/10	07/01/11	\$137,000	\$137,000	\$274,000
Burlington College PSI	Energy Efficiency	Efficiency	Burlington	Chittenden	D-ASEP-REN-021	07/01/10	10/01/11	\$233,000	\$232,878	\$465,878
Visiting Nurse Association PSI	Energy Efficiency	Efficiency	Colchester	Chittenden	D-ASEP-REN-042	07/01/10	07/01/11	\$50,000	\$60,493	\$110,493
Northern Tier Ctr for Health (NOTCH) PSI	Energy Efficiency	Efficiency	Richford	Franklin	D-ASEP-REN-015	07/01/10	12/31/11	\$72,500	\$75,100	\$147,600
VT Technical College PSI	Geothermal	Geothermal	Randolph	Orange	D-ASEP-REN-014	07/01/10	11/30/11	\$50,000	\$108,588	\$158,588
North Country Hospital PSI	Biomass District	Biomass	Newport	Orleans	D-ASEP-REN-043	08/01/10	06/30/11	\$149,478	\$149,479	\$298,957
Castleton State College PSI	Energy Efficiency	Efficiency	Castleton	Rutland	D-ASEP-REN-020	07/01/10	12/31/11	\$137,964	\$137,964	\$275,928
College of St Joseph PSI	Energy Efficiency	Efficiency	Rutland	Rutland	D-ASEP-REN-013	07/01/10	11/01/10	\$122,749	\$112,749	\$235,498
Goddard College PSI	Biomass District	Biomass	Plainfield	Washington	D-ASEP-REN-045	09/01/10	12/31/11	\$150,000	\$300,000	\$450,000
VT College of Fine Arts PSI	Energy Efficiency	Efficiency	Montpelier	Washington	D-ASEP-REN-012	07/01/10	08/31/11	\$233,000	\$233,108	\$466,108
Brattleboro Retreat PSI	Energy Efficiency	Efficiency	Brattleboro	Windham	D-ASEP-REN-019	07/01/10	12/31/10	\$50,000	\$67,016	\$117,016
Marlboro College PSI	Energy Efficiency	Efficiency	Marlboro	Windham	D-ASEP-REN-016	07/01/10	07/01/11	\$83,258	\$83,257	\$166,515
VT Law School PSI	Energy Efficiency	Efficiency	South Royalton	Windsor	D-ASEP-REN-018	07/01/10	12/31/11	\$250,000	\$681,110	\$931,110
<b>Sub-Total: ARRA SEP - Public Serving Institutions</b>								<b>\$1,718,949</b>	<b>\$2,378,742</b>	<b>\$4,097,691</b>
<b>ARRA-SEP Renewable Energy &amp; Efficiency Grants</b>										
Lyndon Town School	Exterior Lighting	Efficiency	Lyndonville	Caledonia	D-ASEP-REN-026	07/19/10	07/19/11	\$50,000	\$5,579	\$55,579
The Newark School	Exterior Lighting	Efficiency	West Burke	Caledonia	D-ASEP-REN-029	07/20/10	07/20/11	\$10,913	\$1,213	\$12,126
Unified School District 37-Miller's Run	Exterior Lighting	Efficiency	Sheffield	Caledonia	D-ASEP-REN-030	07/20/10	07/20/11	\$17,010	\$3,000	\$20,010
Burlington Distr Energy Study	Biomass District	Biomass	Burlington	Chittenden	D-ASEP-REN-011	07/01/10	09/01/11	\$70,000	\$70,000	\$140,000
S Burlington Co-Generation	Energy Efficiency	Efficiency	South Burlington	Chittenden	D-ASEP-REN-008	07/01/10	02/01/12	\$260,000	\$279,900	\$539,900
Colchester School District	Exterior Lighting	Efficiency	Colchester	Chittenden	D-ASEP-REN-031	07/23/10	07/23/11	\$50,000	\$97,170	\$147,170
Milton Town School District	Exterior Lighting	Efficiency	Milton	Chittenden	D-ASEP-REN-032	07/26/10	07/26/11	\$45,747	\$5,083	\$50,830
Camels Hump Middle School	Exterior Lighting	Efficiency	Richmond	Chittenden	D-ASEP-REN-034	08/03/10	08/03/11	\$18,955	\$2,550	\$21,505
Underhill ID Elementary School	Exterior Lighting	Efficiency	Jericho	Chittenden	D-ASEP-REN-036	08/05/10	09/20/11	\$5,575	\$750	\$6,325
Jericho Elementary School	Exterior Lighting	Efficiency	Jericho	Chittenden	D-ASEP-REN-037	08/05/10	09/20/11	\$30,685	\$5,550	\$36,235
East Haven School District	Exterior Lighting	Efficiency	East Haven	Essex	D-ASEP-REN-028	07/20/10	07/20/11	\$10,000	\$1,100	\$11,100
Swanton Elementary School	Exterior Lighting	Efficiency	Swanton	Franklin	D-ASEP-REN-024	07/14/10	07/14/11	\$50,000	\$12,854	\$62,854
St. Albans Town Education Center	Exterior Lighting	Efficiency	St. Albans	Franklin	D-ASEP-REN-027	07/19/10	07/19/11	\$50,000	\$9,664	\$59,664
Fairfax Town School District (BFA Fairfax)	Exterior Lighting	Efficiency	Fairfax	Franklin	D-ASEP-REN-038	08/06/10	08/06/11	\$40,105	\$4,955	\$45,060
Georgia Elementary & Middle School	Exterior Lighting	Efficiency	St. Albans	Franklin	D-ASEP-REN-039	08/06/10	08/06/11	\$49,421	\$10,305	\$59,726
Missisquoi Valley Union High School	Exterior Lighting	Efficiency	Swanton	Franklin	D-ASEP-REN-041	08/06/10	08/06/11	\$50,000	\$7,779	\$57,779
Folsom Educational & Community Ctr	Exterior Lighting	Efficiency	South Hero	Grand Isle	D-ASEP-REN-033	08/02/10	08/02/11	\$46,925	\$5,214	\$52,139
Lamoille Union High School District #18	Exterior Lighting	Efficiency	Hyde Park	Lamoille	D-ASEP-REN-025	07/14/10	12/01/11	\$47,107	\$14,474	\$61,581
Vermont Solar	PV	Solar	Killington	Rutland	D-ASEP-REN-044	09/01/10	09/01/11	\$150,000	\$878,126	\$1,028,126
VT Sustainable Jobs Fund	Mapping	Energy Planning	Montpelier	Statewide	D-ASEP-REN-046	10/01/10	01/31/12	\$65,000	\$7,725	\$72,725
Maple Corner Study	Biomass District	Biomass	Montpelier	Washington	D-ASEP-REN-010	07/01/10	08/31/11	\$17,000	\$4,280	\$21,280
Barre City Elementary & Middle School	Exterior Lighting	Efficiency	Barre	Washington	D-ASEP-REN-023	07/13/10	07/13/11	\$41,139	\$4,571	\$45,710
Smilie Memorial Elementary School	Exterior Lighting	Efficiency	Waterbury	Washington	D-ASEP-REN-035	08/04/10	09/20/11	\$18,845	\$3,150	\$21,995
Landmark College study	Biomass District	Biomass	Putney	Windham	D-ASEP-REN-022	07/01/10	07/01/11	\$20,000	\$5,000	\$25,000
Springfield School District	Exterior Lighting	Efficiency	Springfield	Windsor	D-ASEP-REN-040	08/06/10	08/06/11	\$50,000	\$20,624	\$70,624
<b>Sub-Total: ARRA-SEP Renewable Energy &amp; Other Grants</b>								<b>\$1,264,427</b>	<b>\$1,460,616</b>	<b>\$2,725,043</b>
<b>ARRA-SEP Loans</b>										
Burke Mountain	Wind Turbine	Wind	East Burke	Caledonia	D2240-ASEP-L06	06/13/11	06/23/18	\$500,000	\$473,157	\$973,157
Farm at South Village	PV	Solar	South Burlington	Chittenden	D2240-ASEP-L07	06/01/11	09/01/21	\$225,790	\$564,812	\$790,602
Draker Laboratories	Software	Solar	Burlington	Chittenden	D2240-ASEP-L02	10/07/10	10/07/13	\$425,790	\$47,310	\$473,100
SB Electronics	Electric Vehicle Components	Energy Efficiency Technologies	Barre	Washington	D2240-ASEP-L10	06/17/11	06/17/19	\$499,000	\$4,446,000	\$4,945,000
Goddard College	Biomass District	Biomass	Plainfield	Washington	D2240-ASEP-L08	06/13/11	06/13/18	\$350,000	\$1,502,500	\$1,852,500
Carbon Harvest	Landfill gas, algae	Biogas	Brattleboro	Windham	D2240-ASEP-L01	07/01/10	07/01/20	\$500,000	\$1,100,000	\$1,600,000
<b>Sub-Total: ARRA-SEP Loans</b>								<b>\$2,500,580</b>	<b>\$8,133,779</b>	<b>\$10,634,359</b>
<b>ARRA-SEP State Projects</b>										
BGS-Bennington	Heating	Geothermal	Bennington	Bennington	MOU	08/01/10	12/31/11	\$2,000,000	\$0	\$2,000,000
BGS-Waterbury	Energy Efficiency Retrofits	Efficiency	Waterbury	Washington	MOU	04/01/11	12/31/11	\$1,000,000	\$0	\$1,000,000
CEP Economic Modeling	--	Energy Planning	Cambridge, MA	Statewide	19902	06/15/11	12/31/11	\$195,000	\$50,000	\$245,000
Comprehensive Energy Plan Consulting	--	Energy Planning	Montpelier	Statewide	19886	06/23/11	12/31/11	\$25,000	\$0	\$25,000
Comprehensive Energy Plan Consulting	--	Energy Planning	South Royalton	Statewide	19903	06/15/11	12/31/11	\$30,000	\$0	\$30,000
Powersmith Solar Net Metering	PV	Energy Planning	Guilford	Statewide	17834	07/01/10	06/30/11	\$29,500	\$1,850	\$31,350
<b>Sub-Total: ARRA-SEP State Projects</b>								<b>\$3,279,500</b>	<b>\$51,850</b>	<b>\$3,331,350</b>

Appendix 4: FY 2011 CEDF and ARRA Funded Projects

Project Name	Technology	Sector or Category	City	County/ Area	Sub-award #	Start Term	End Term	Amount of Award	Grantee Match or Leverage	Total Project Costs
<b>VT CEDF Grants</b>										
Nathaniel Group-LED	Energy Efficient Technologies	Energy Efficiency Technologies	Vergennes	Addison	240-CEDF-0110	08/01/10	10/01/11	\$33,920	\$65,857	\$99,777
Four Hills Farm	Methane Digester	Farm Energy	Bristol	Addison	240-CEDF-0107	08/01/10	08/01/12	\$250,000	\$2,530,260	\$2,780,260
Kane's Cow Power LLC	Methane Digester	Farm Energy	Enosburg Falls	Franklin	240-CEDF-0108	08/01/10	08/01/12	\$150,000	\$1,628,950	\$1,778,950
Fairfield Study	Solar, Hydro	Energy Planning	Fairfield	Franklin	240-CEDF-0106	07/01/10	07/01/11	\$3,464	\$385	\$3,849
ANR Mapping	Mapping	Energy Planning	Waterbury	Statewide	MOU	04/11/11	05/01/11	\$100,000	\$50,000	\$150,000
VT Renewable Energy for Agric. Program (VAAFPM)	Farm Energy	Farm Energy	Montpelier	Statewide	MOU	07/01/10	06/30/11	\$560,975	\$0	\$560,975
VEDA Seed Capital Fund	Equity investments for energy	Energy Efficiency Technologies	Montpelier	Statewide	MOU	07/01/10	06/30/11	\$500,000	\$0	\$500,000
<b>Sub-Total: VT CEDF Grants</b>								<b>\$1,598,359</b>	<b>\$4,275,452</b>	<b>\$5,873,811</b>
<b>VT CEDF Loans</b>										
Kingsbury Branch Hydro	Refurbish Hydro	Hydro	North Montpelier	Washington	NA	05/11/11	05/10/21	\$81,000	\$11,500	\$92,500
SB Electronics	Electric Vehicle Components	Energy Efficiency Technologies	Barre	Washington	NA	05/11/11	05/11/20	\$251,000	\$0	\$251,000
<b>Sub-Total: VT CEDF Loans</b>								<b>\$332,000</b>	<b>\$11,500</b>	<b>\$343,500</b>
<b>VT CEDF Business Solar Energy Tax Credit Program</b>										
Solar Energy Tax Credits	Solar PV	Solar Tax Credits	Statewide	Statewide	NA	NA	NA	\$8,433,584	\$20,622,107	\$29,055,691
Solar Energy Tax Credits	Solar Thermal	Solar Tax Credits	Statewide	Statewide	NA	NA	NA	\$66,416	\$155,134	\$221,550
<b>Sub-Total: Tax Credits</b>								<b>\$8,500,000</b>	<b>\$20,777,241</b>	<b>\$29,277,241</b>
<b>TOTAL</b>								<b>\$24,131,335</b>	<b>\$38,675,519</b>	<b>\$62,806,854</b>

